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Cheung

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(54) **MIX AND MATCH TOY KIT**

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(51) **Int. Cl.**

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A63H 33/04	(2006.01)
A63H 33/26	(2006.01)
A63H 27/00	(2006.01)
A63H 23/00	(2006.01)

(52) **U.S. Cl.**

CPC ***A63H 17/002*** (2013.01); ***A63H 23/005*** (2013.01); ***A63H 27/001*** (2013.01); ***A63H 33/046*** (2013.01); ***A63H 33/26*** (2013.01)

(58) **Field of Classification Search**

CPC A63H 33/046; A63H 33/044; A63H 33/06; A63H 33/10; A63H 17/002

See application file for complete search history.

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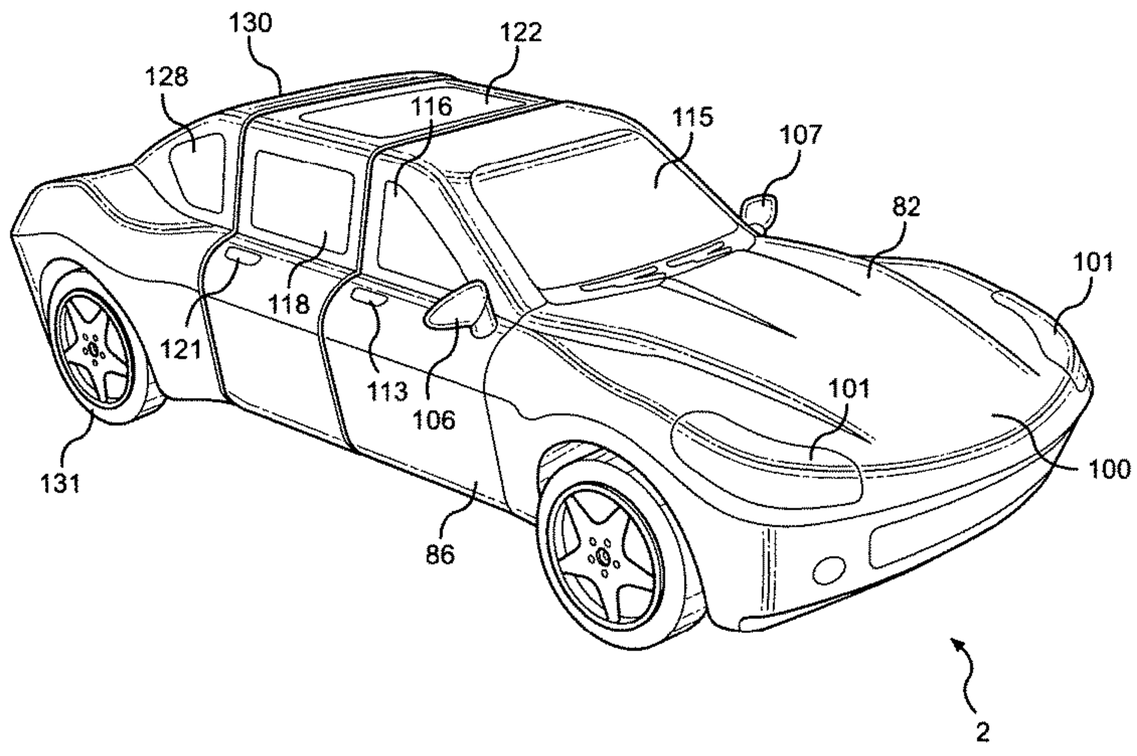
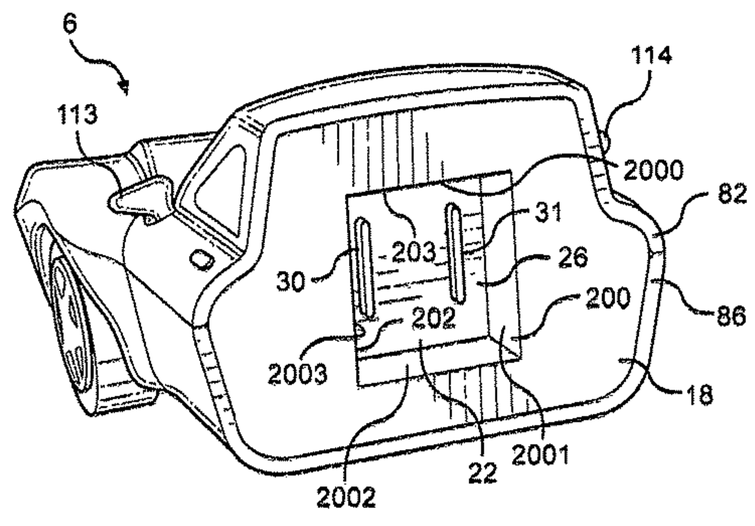
(57) **ABSTRACT**

A mix or match toy set is disclosed wherein four units having a common theme have at least two or three sections. These two or three sections can be interchanged with one another. In one embodiment the units are different transportation vehicles. The units are held together by using magnets in male and female connectors.

12 Claims, 20 Drawing Sheets





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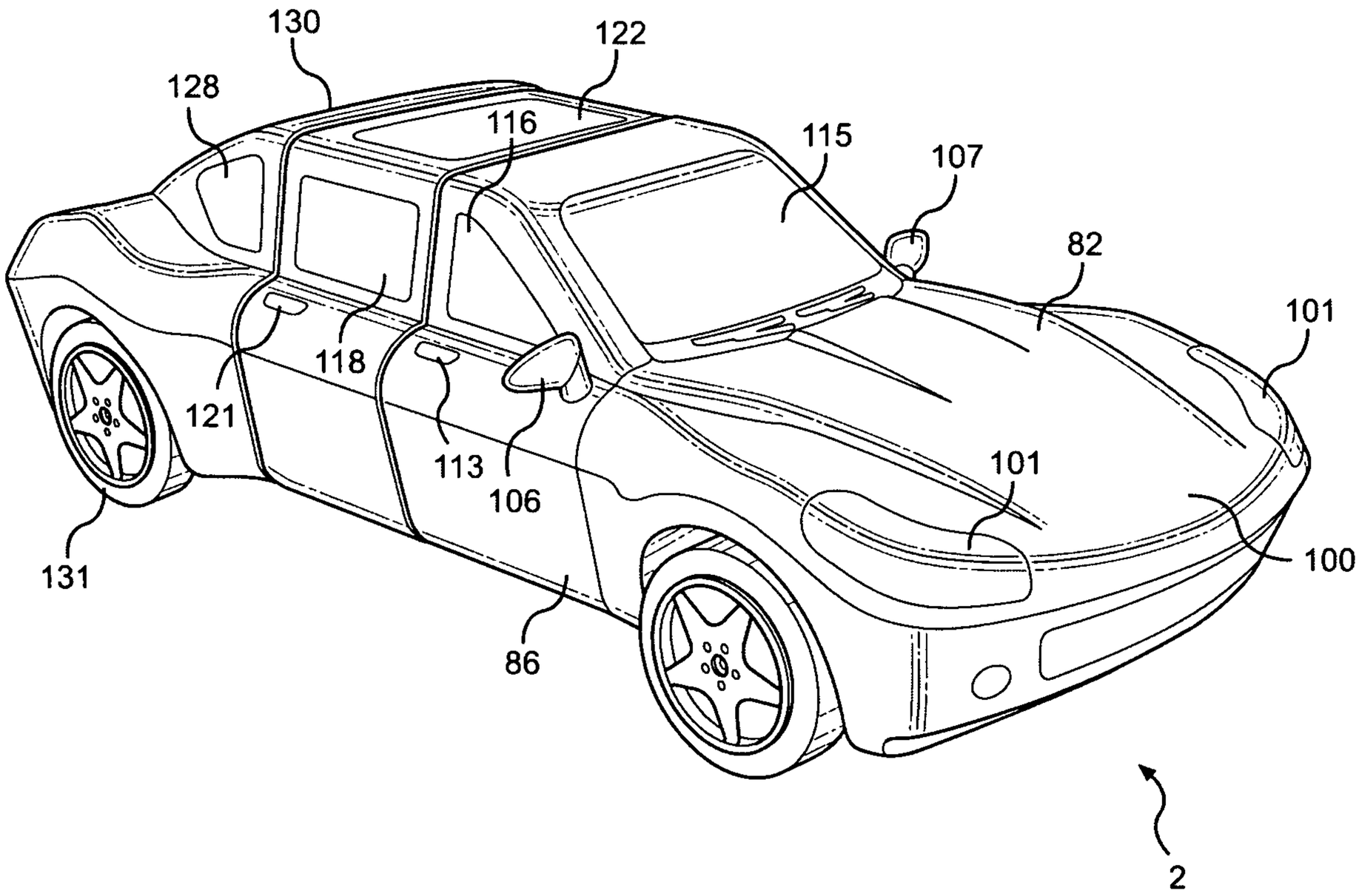

FIG. 1

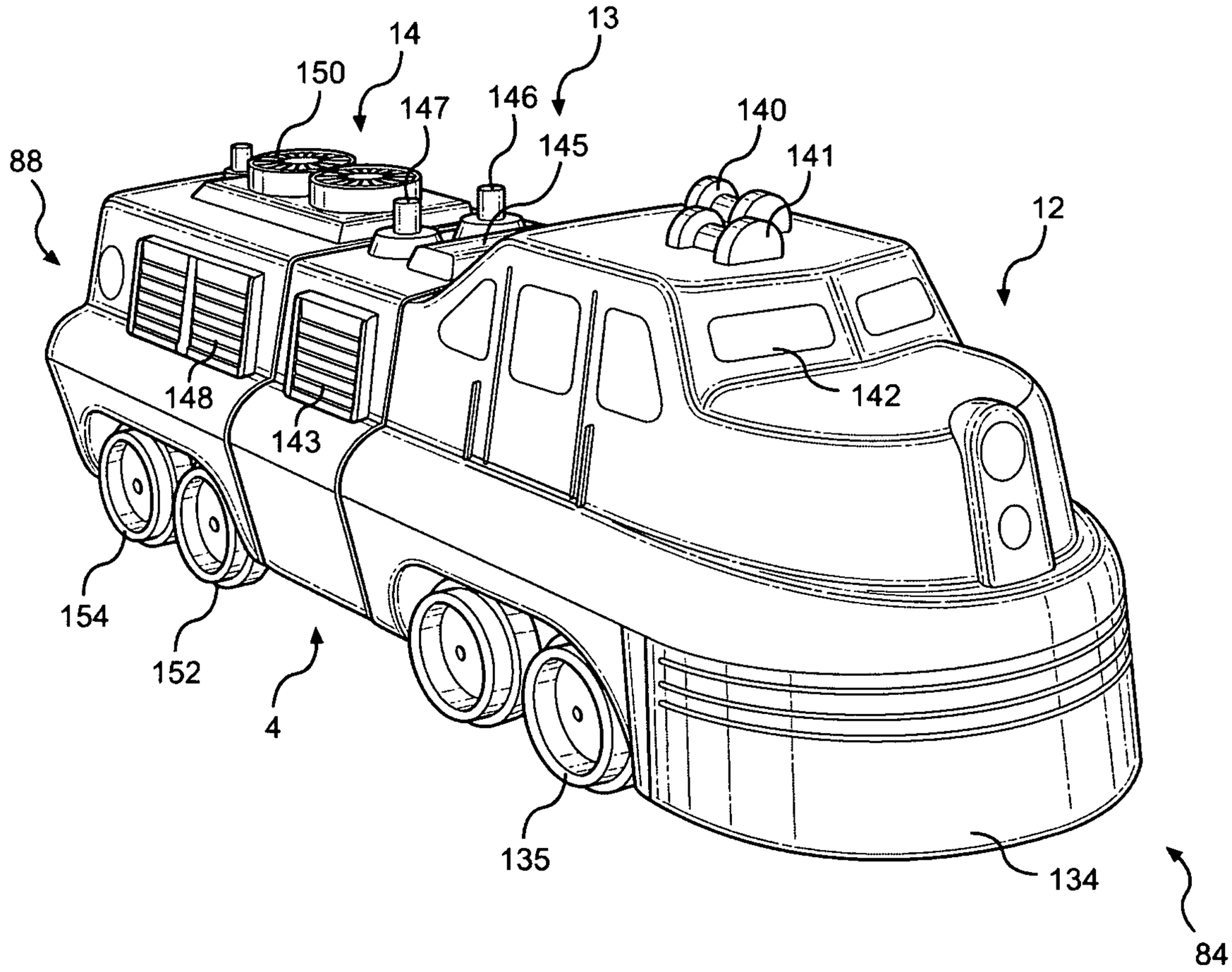
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FIG. 2

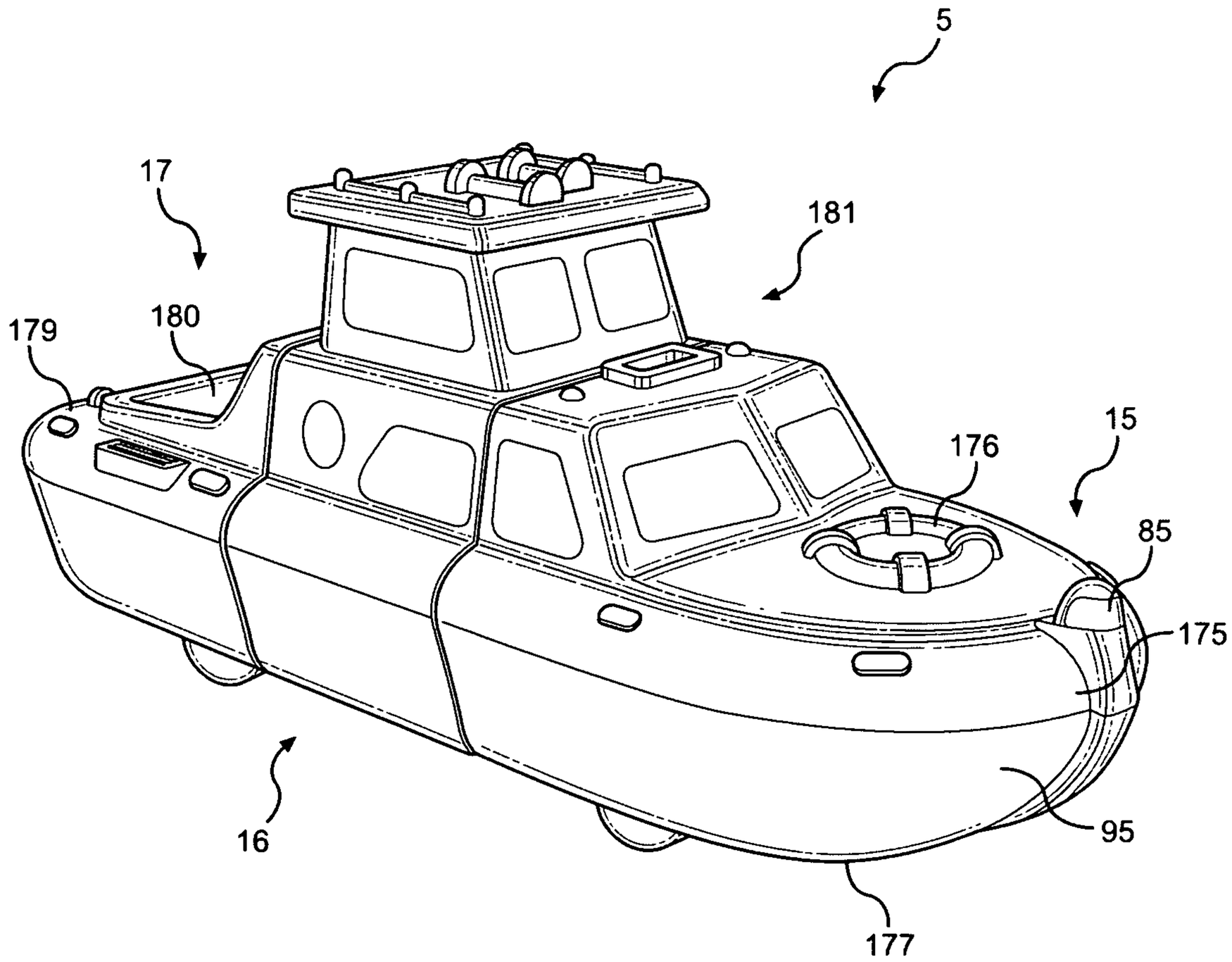

FIG. 3

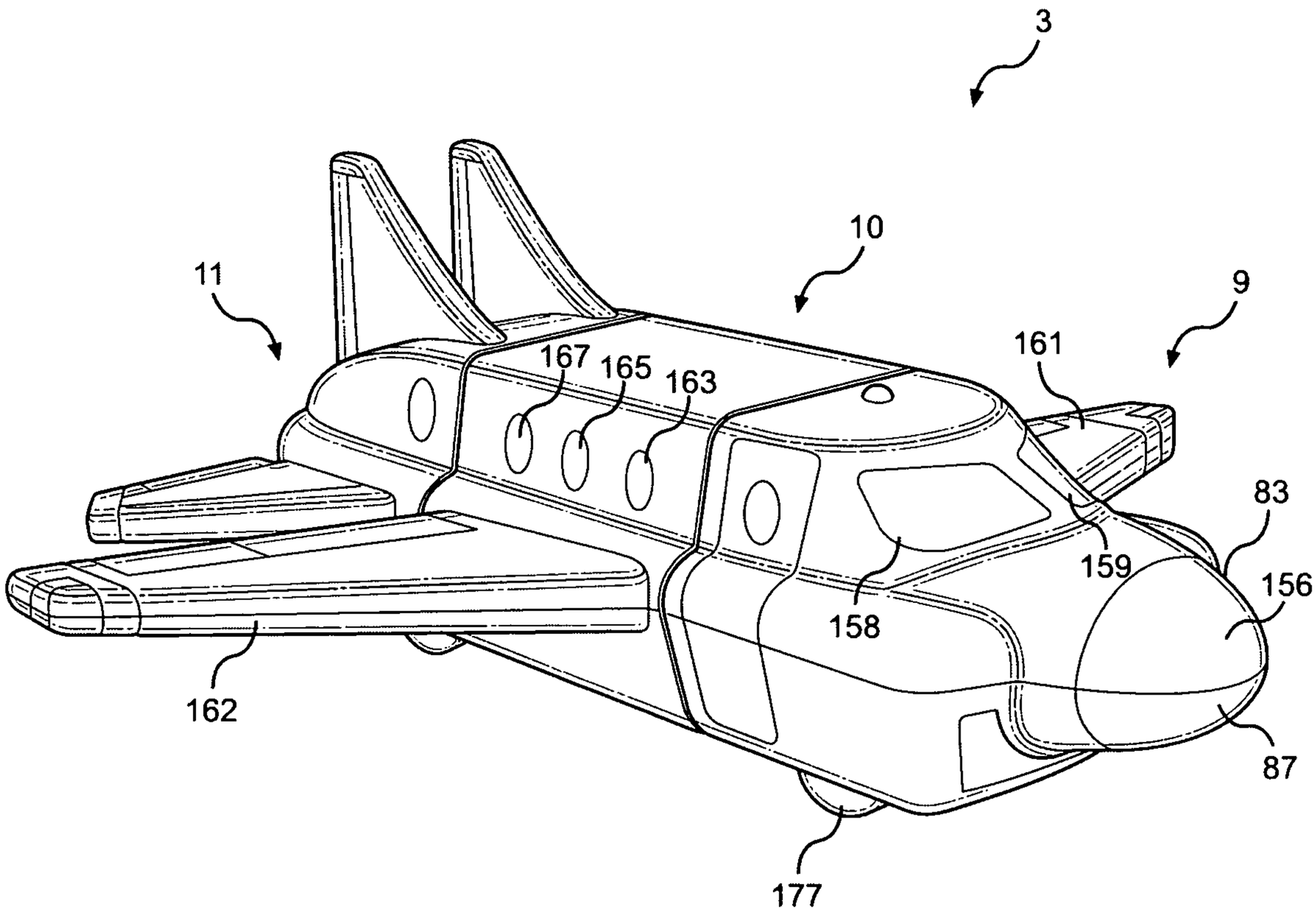

FIG. 4

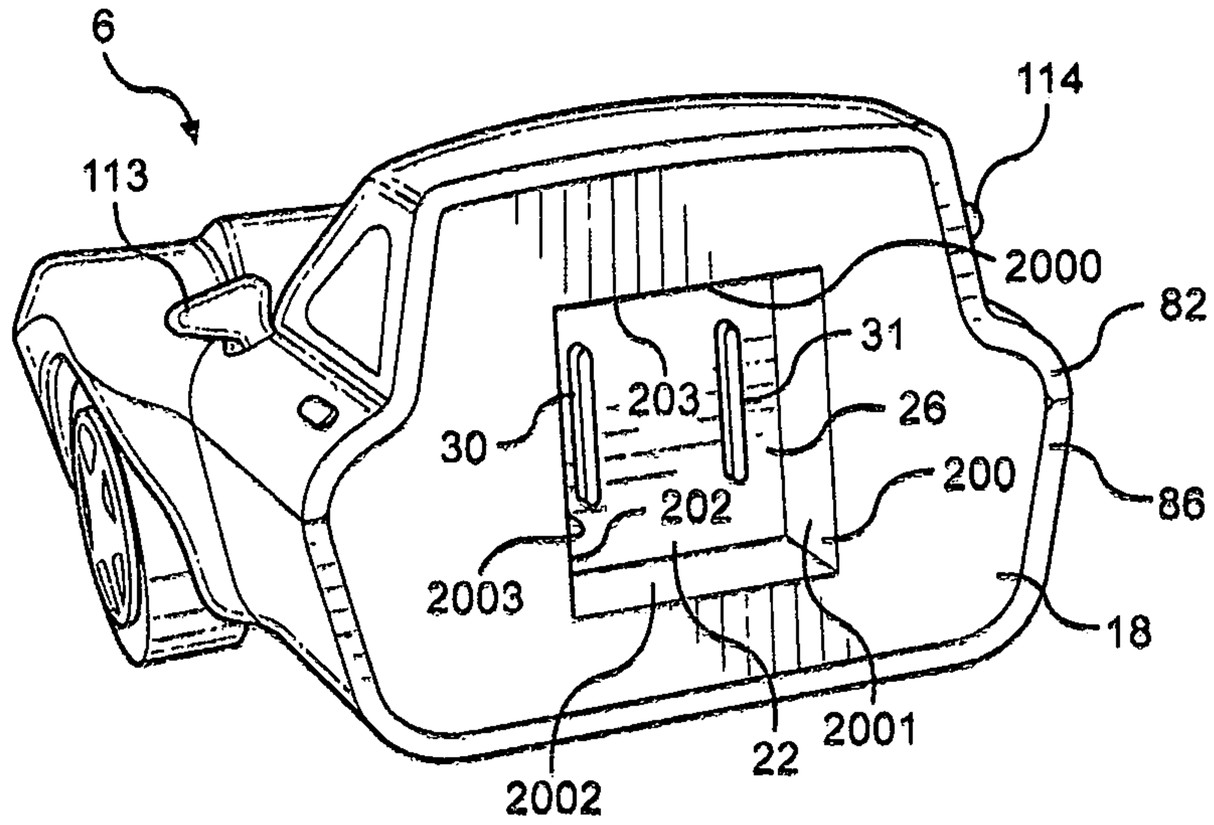
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FIG. 5

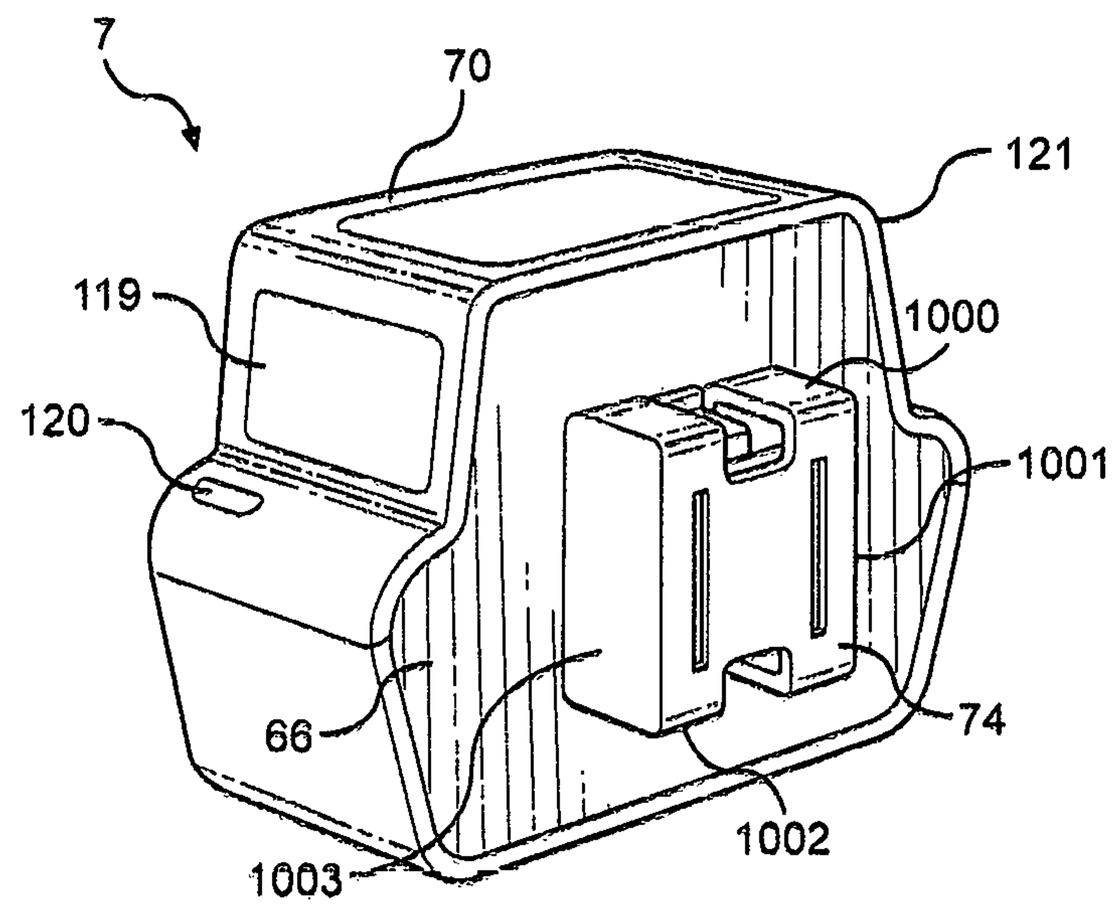
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FIG. 6

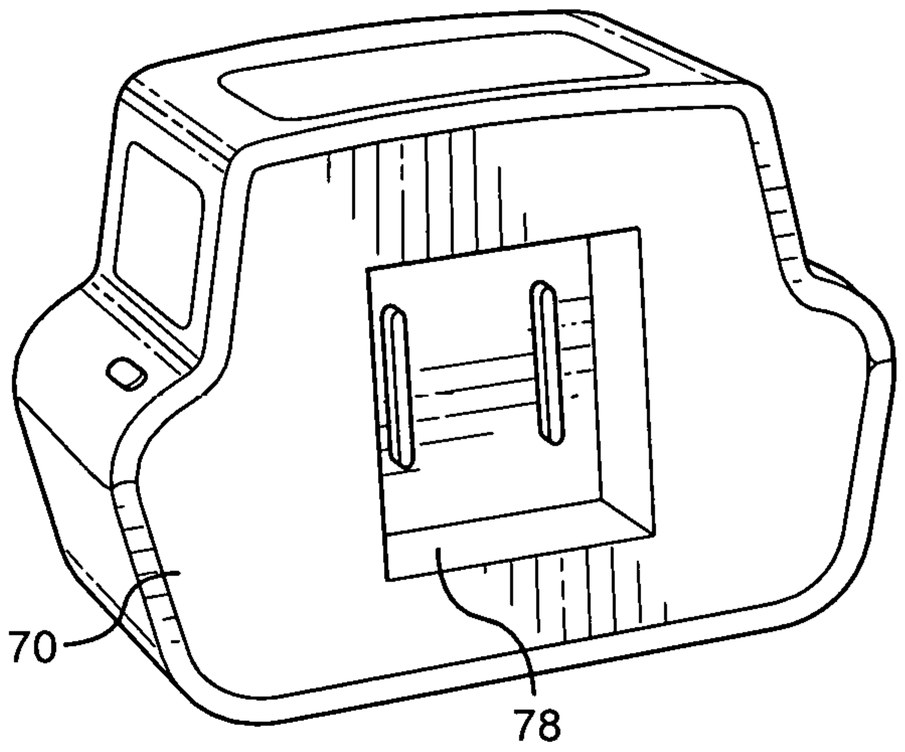
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FIG. 7

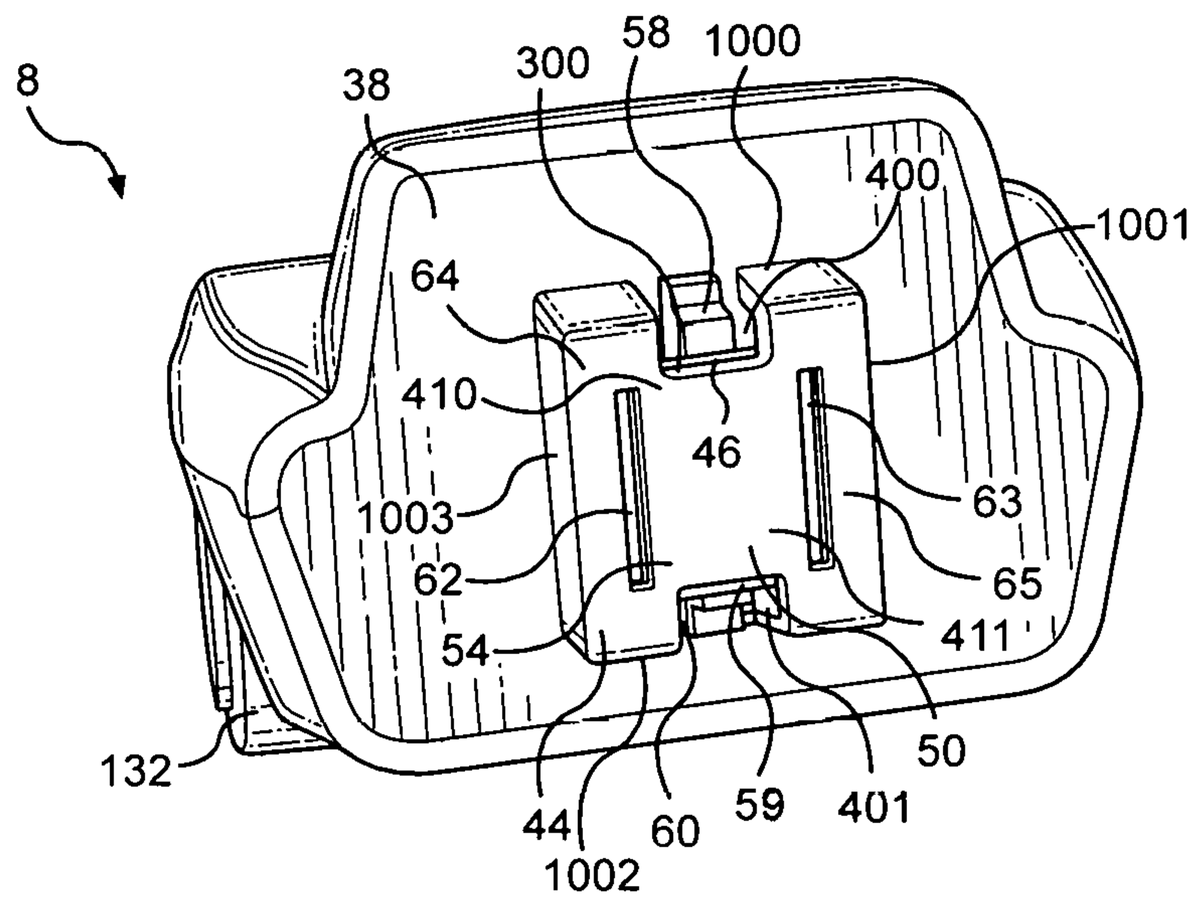
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FIG. 8

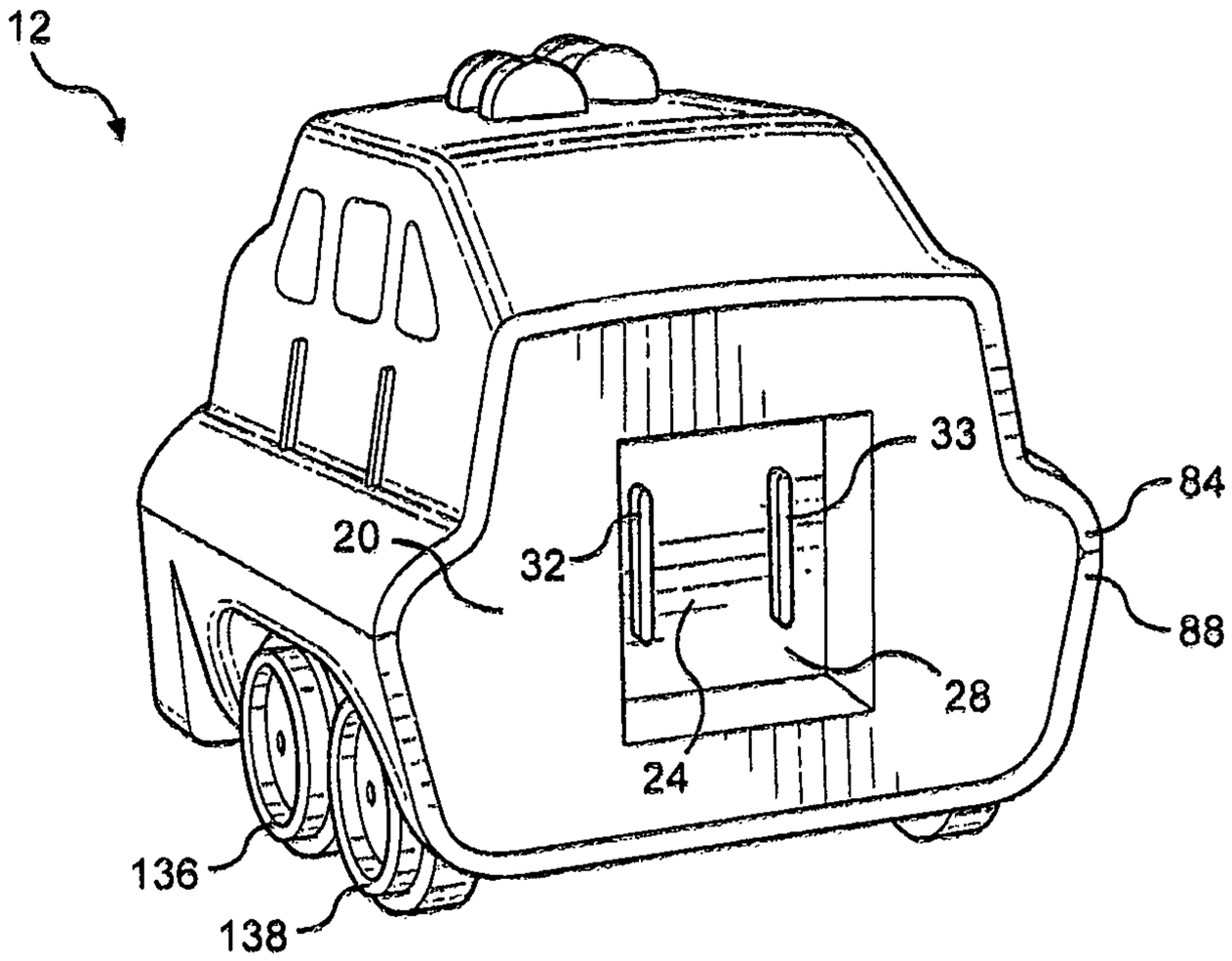
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FIG. 9

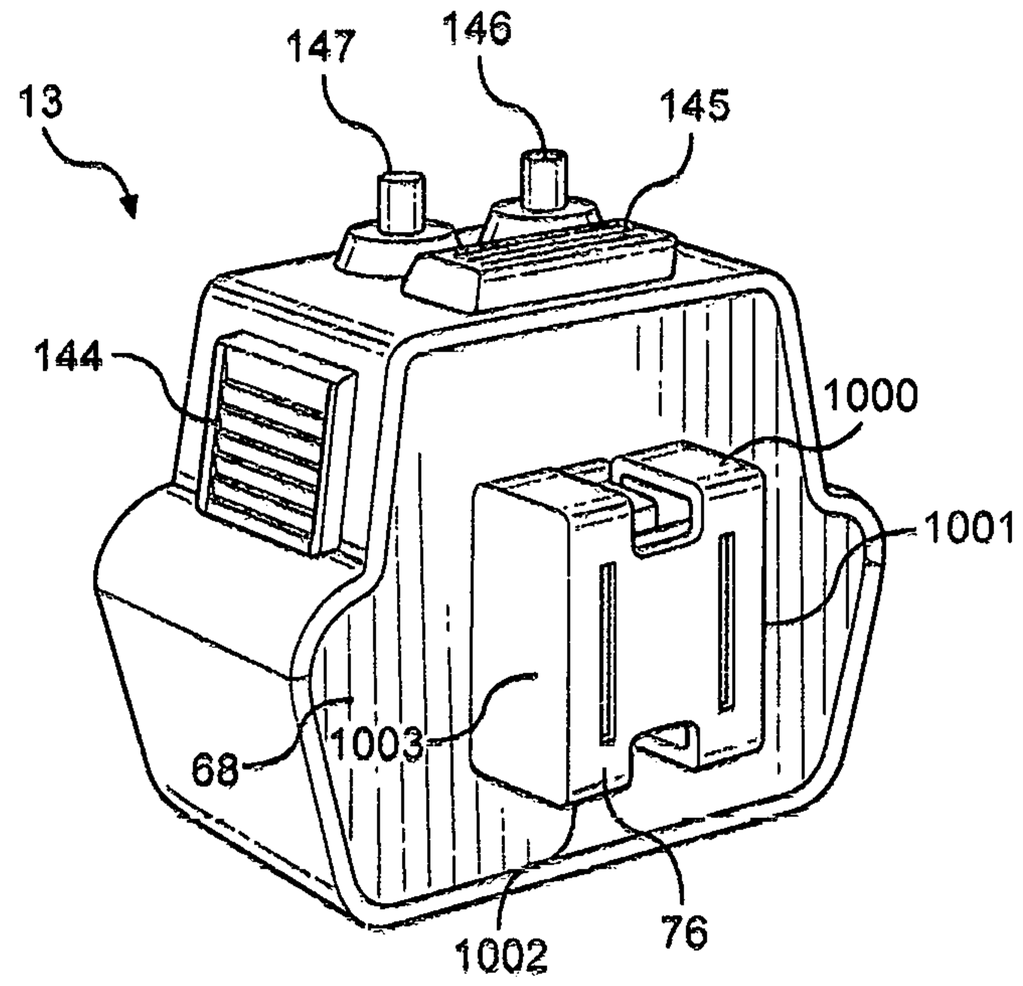
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FIG. 10

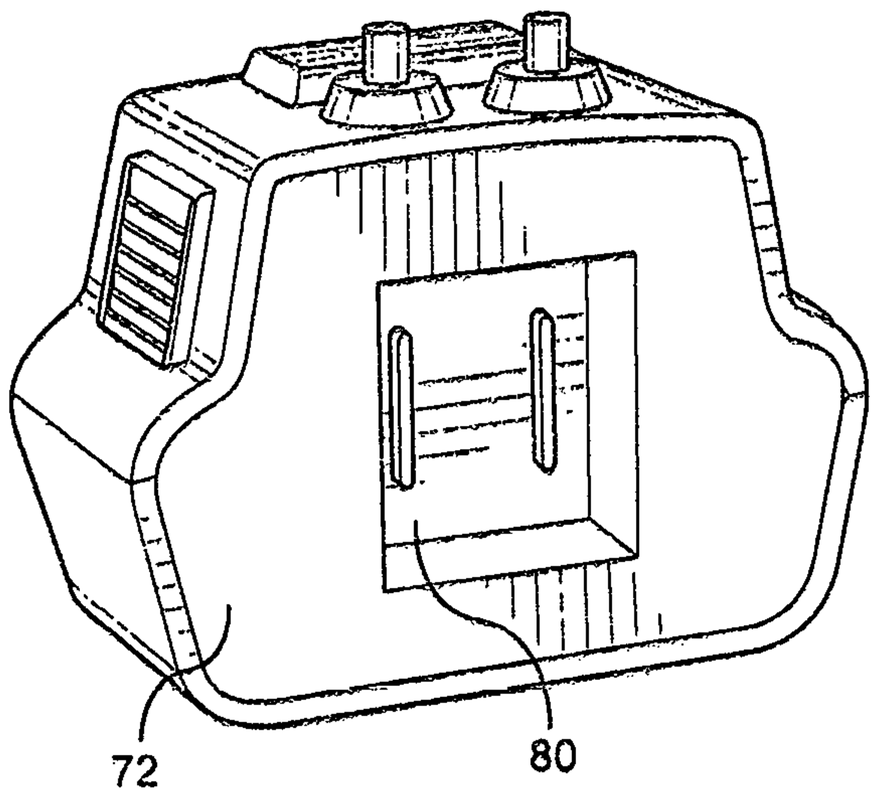

FIG. 11

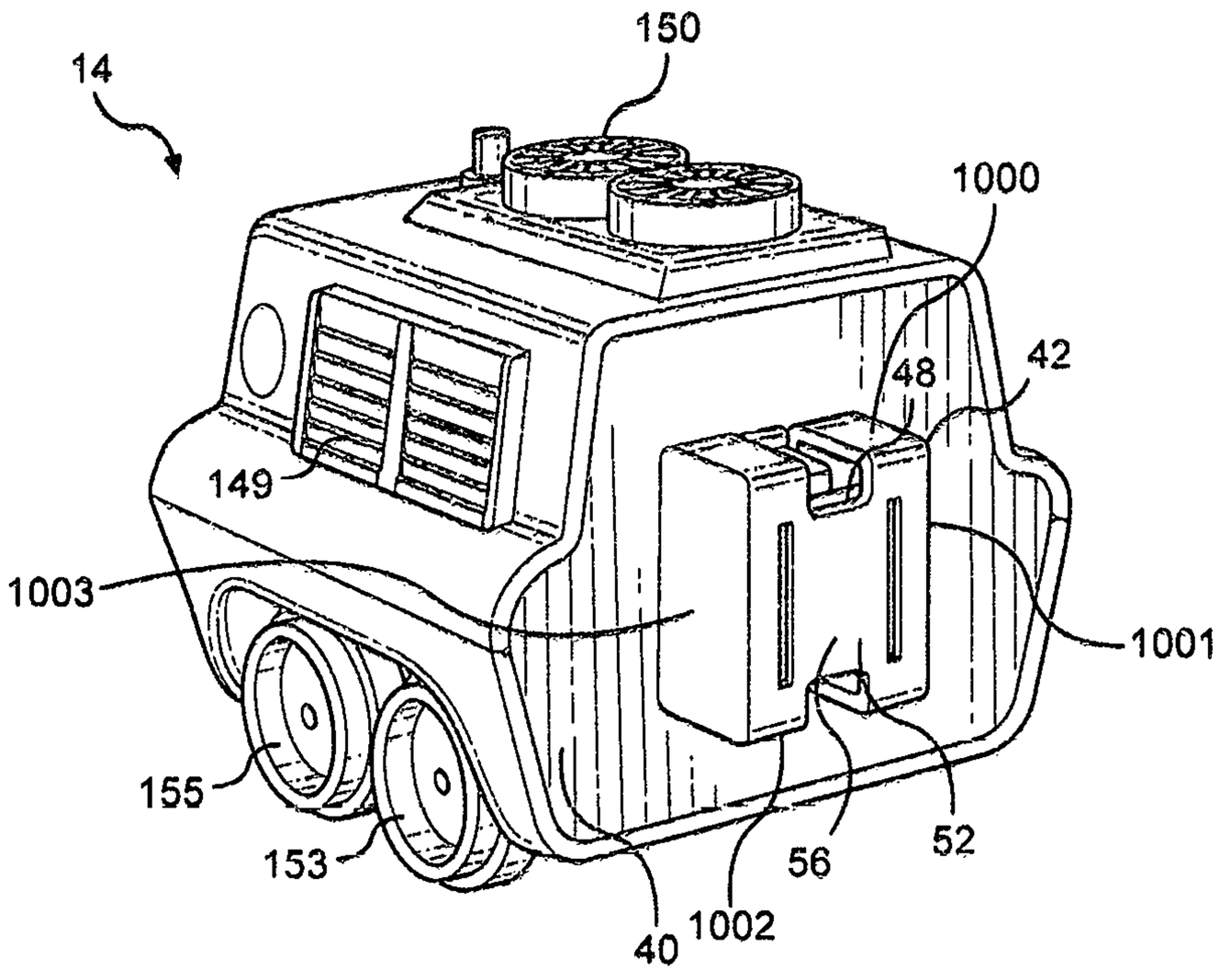

FIG. 12

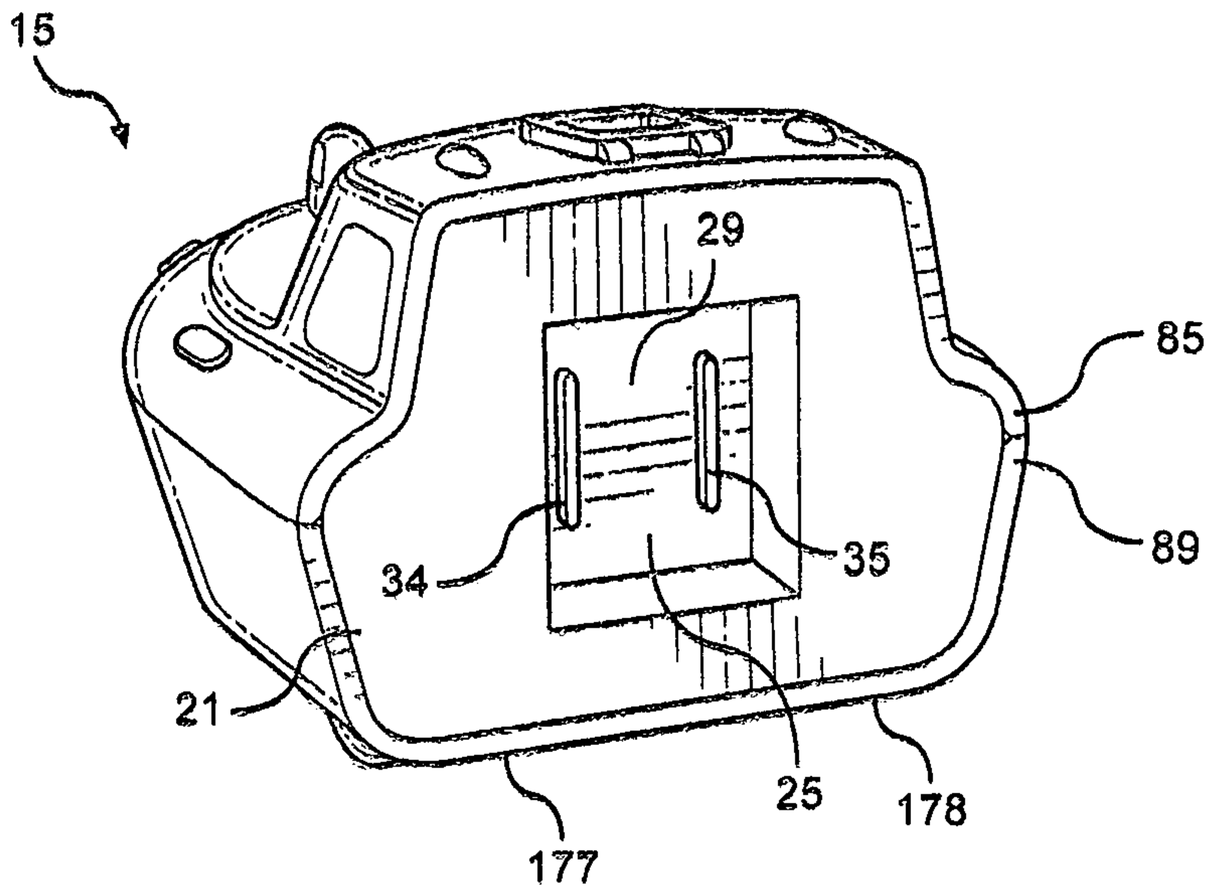

FIG. 13

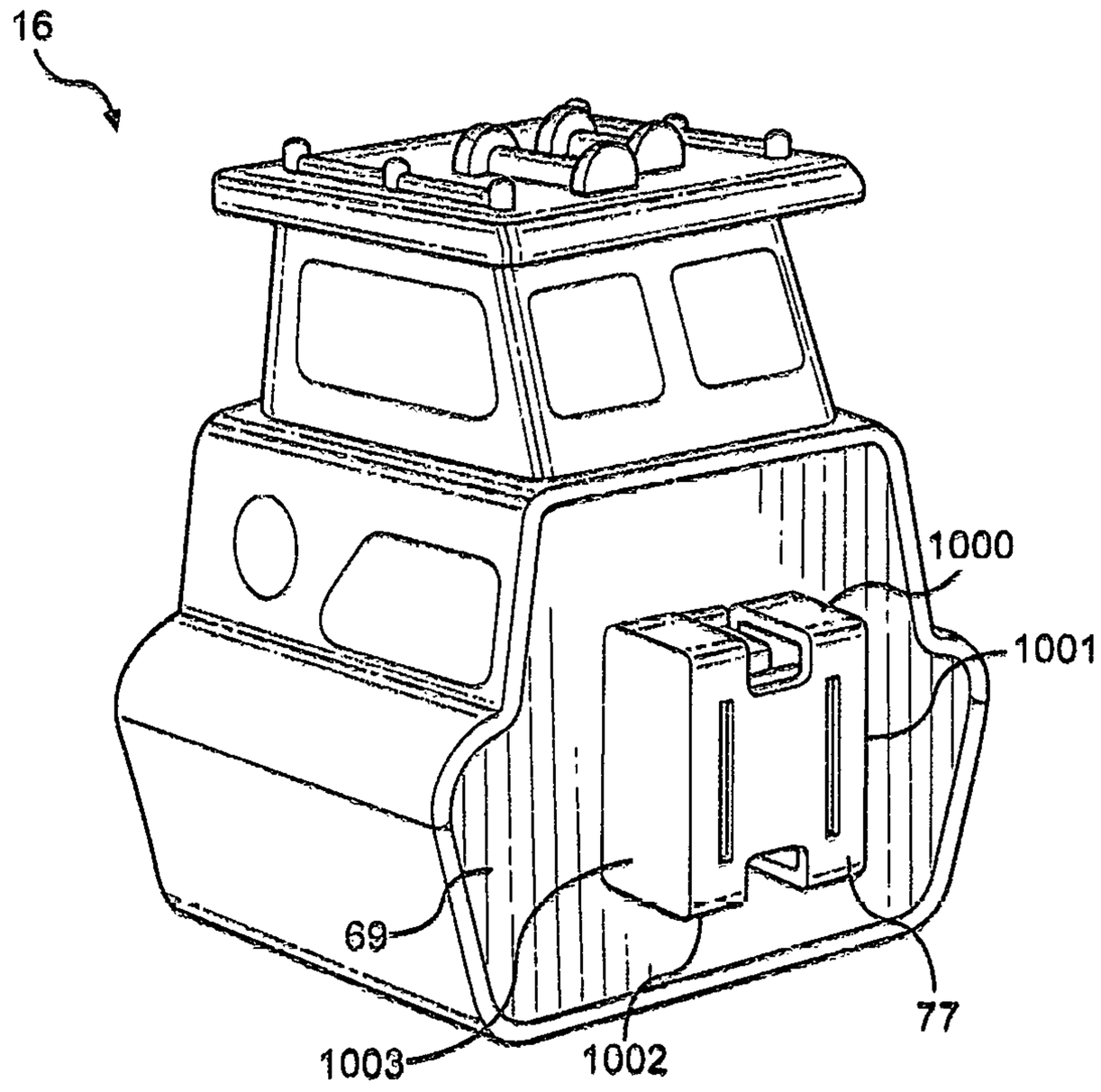

FIG. 14

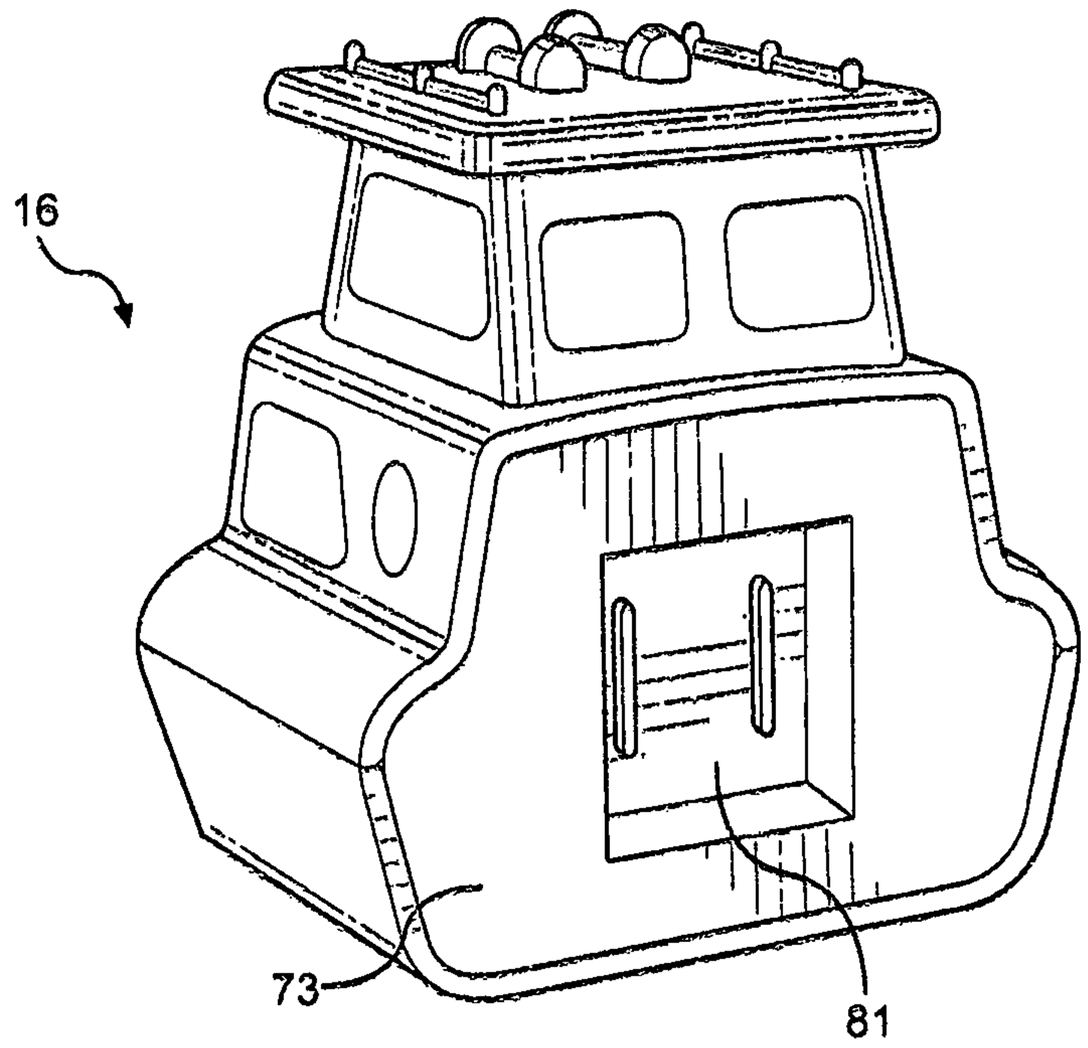

FIG. 15

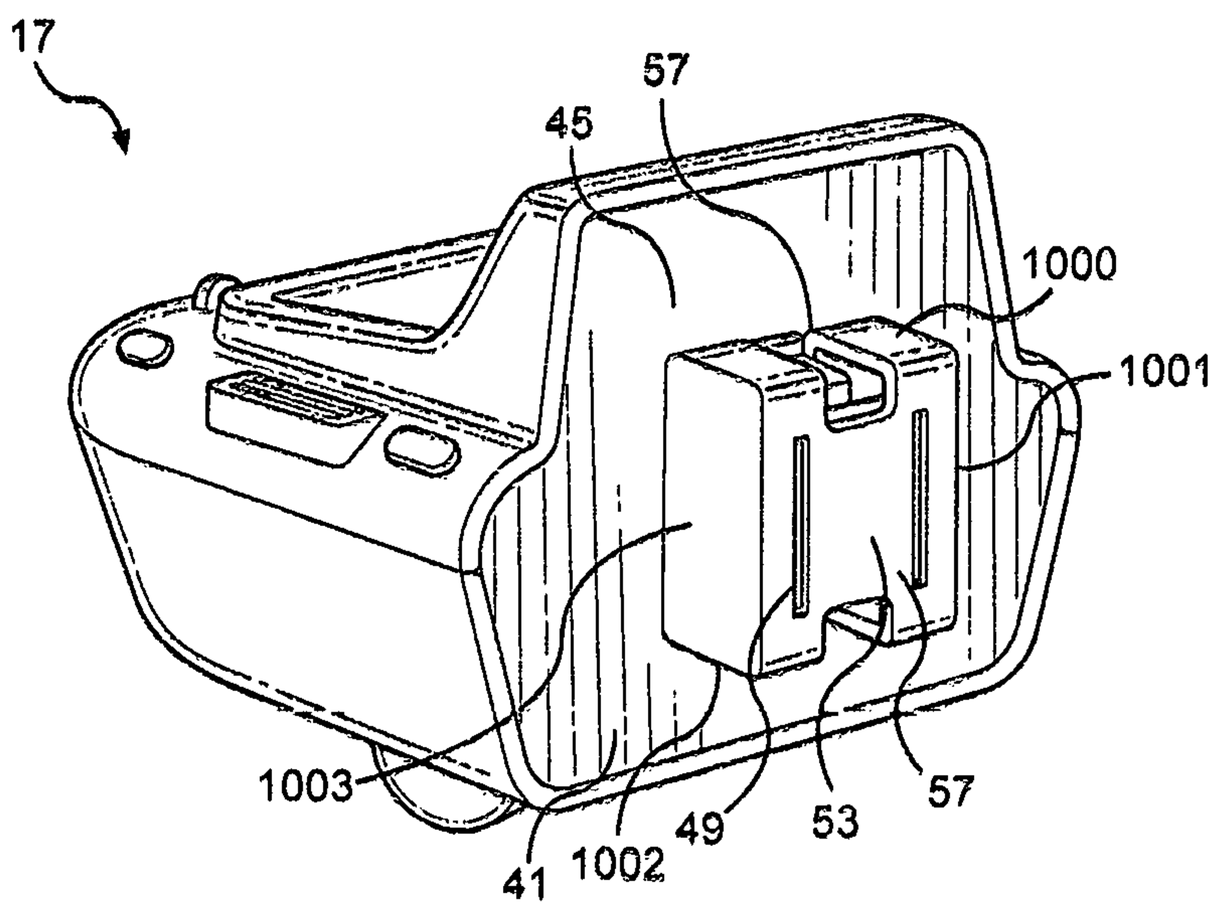

FIG. 16

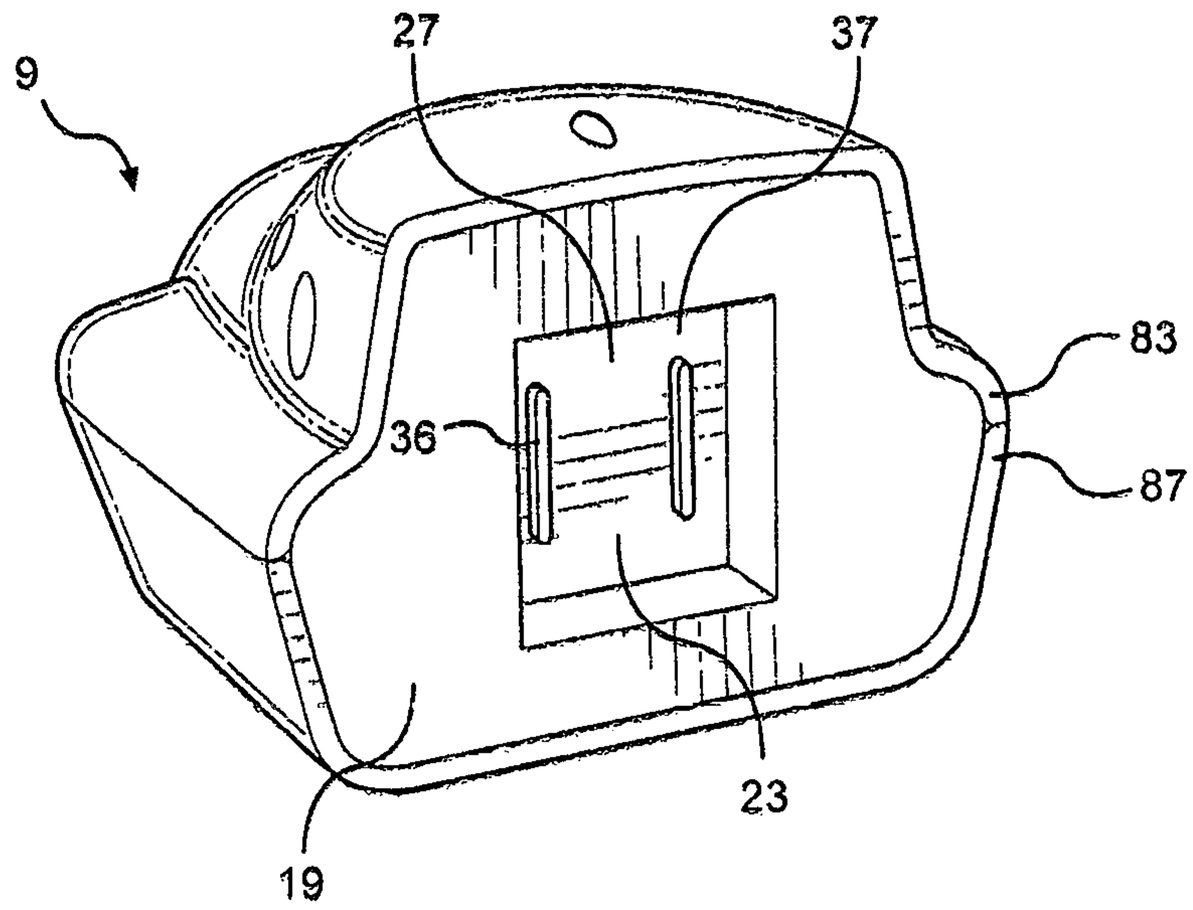

FIG. 17

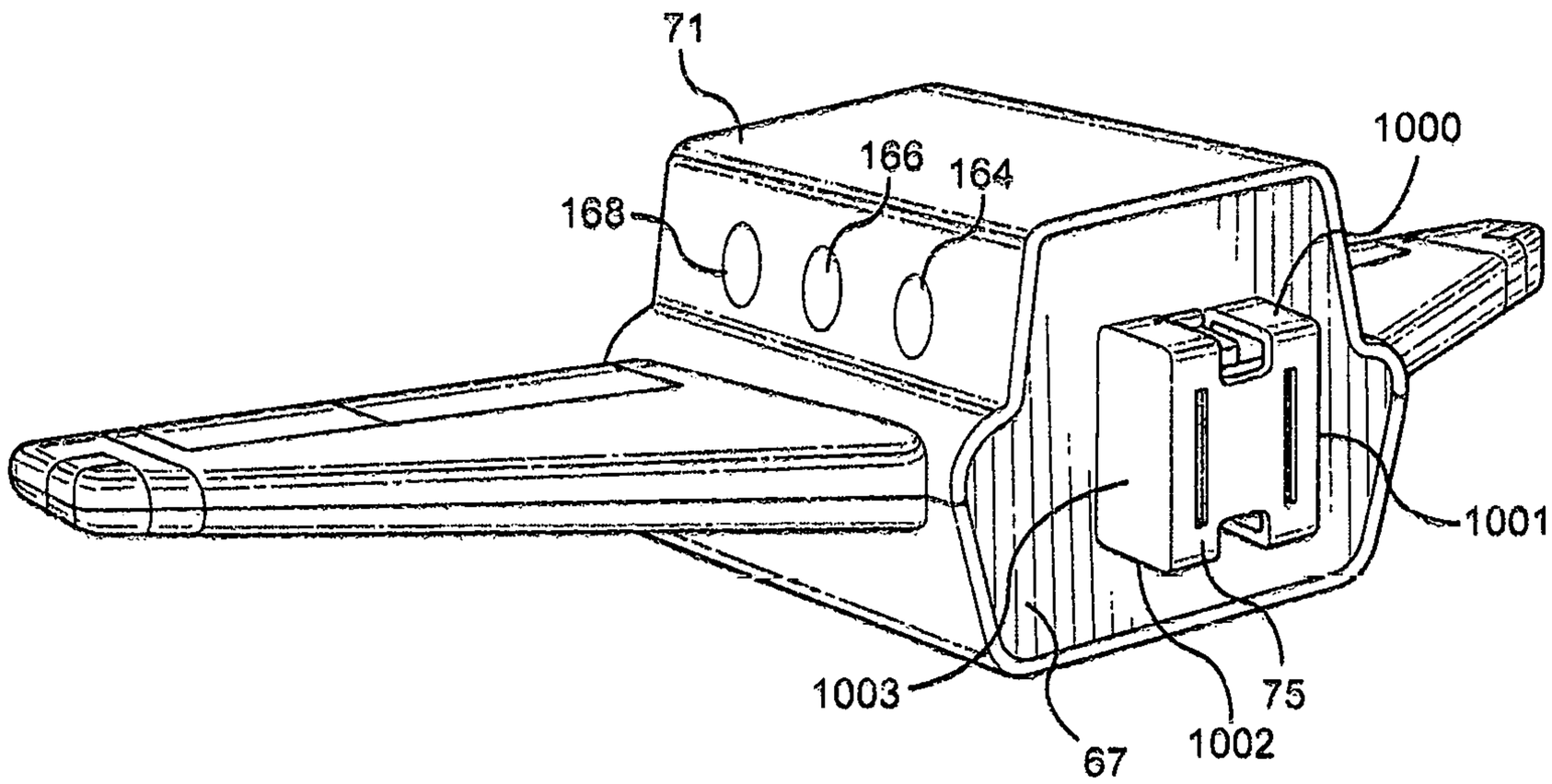

FIG. 18

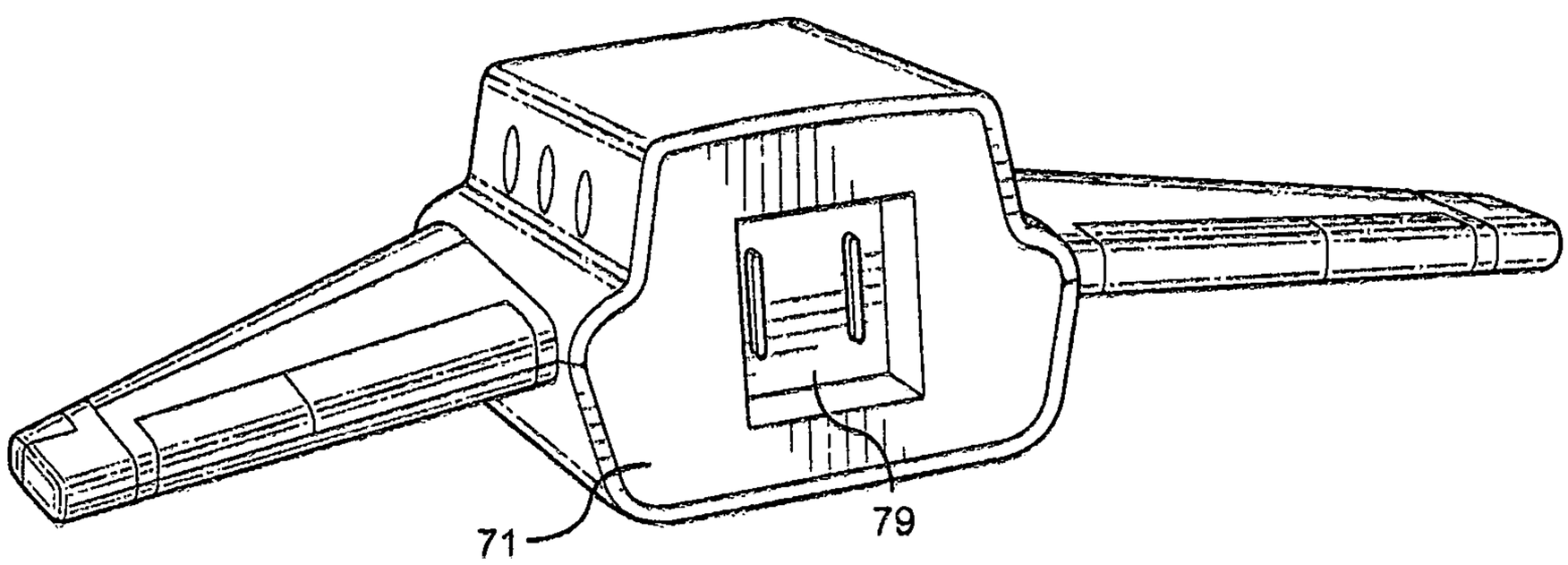

FIG. 19

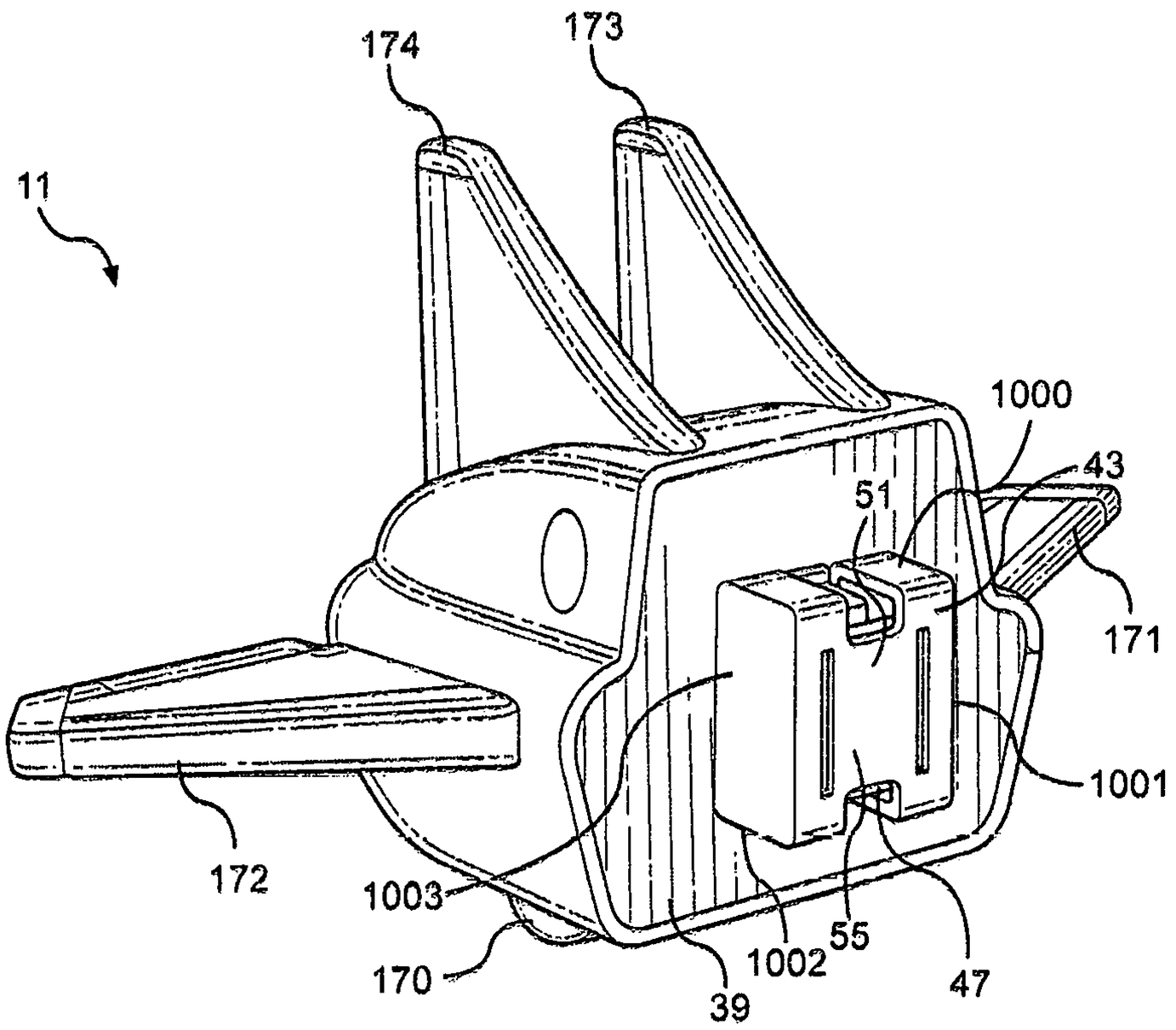

FIG. 20

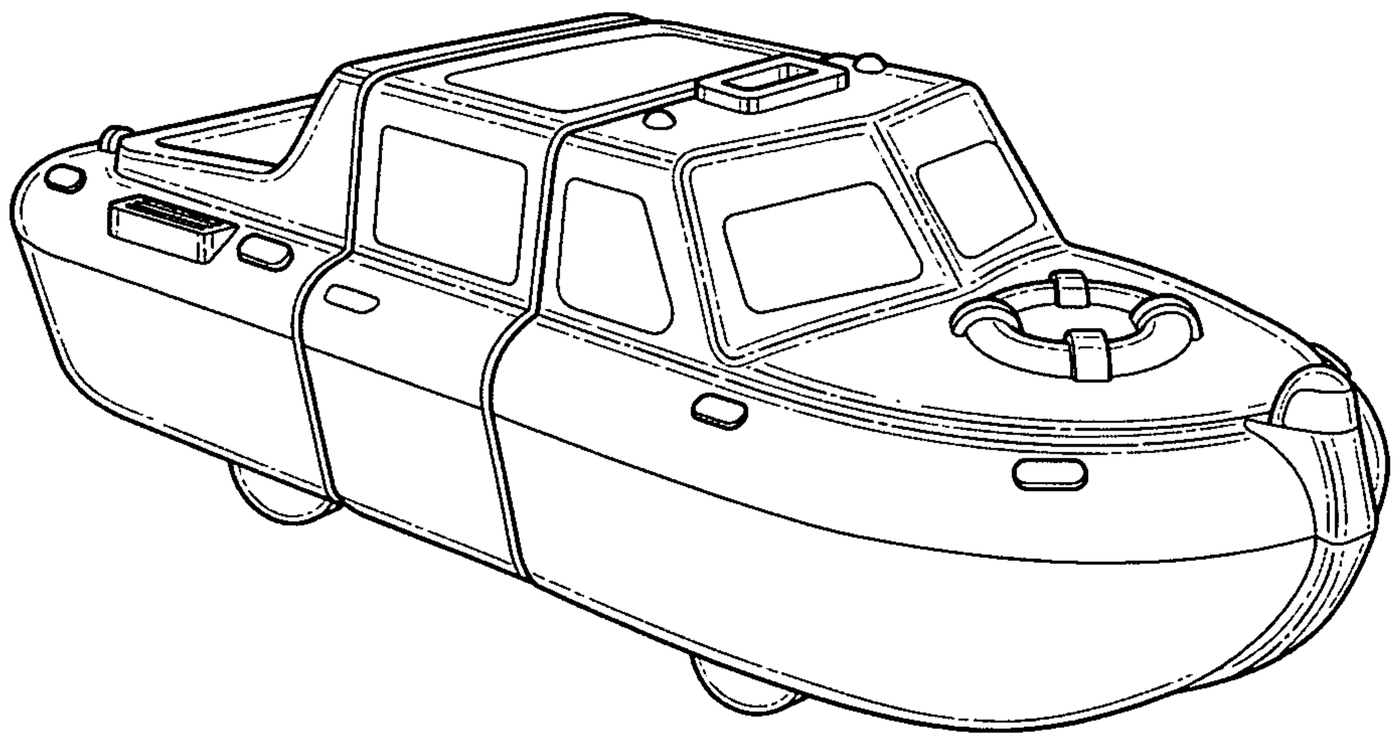

FIG. 21

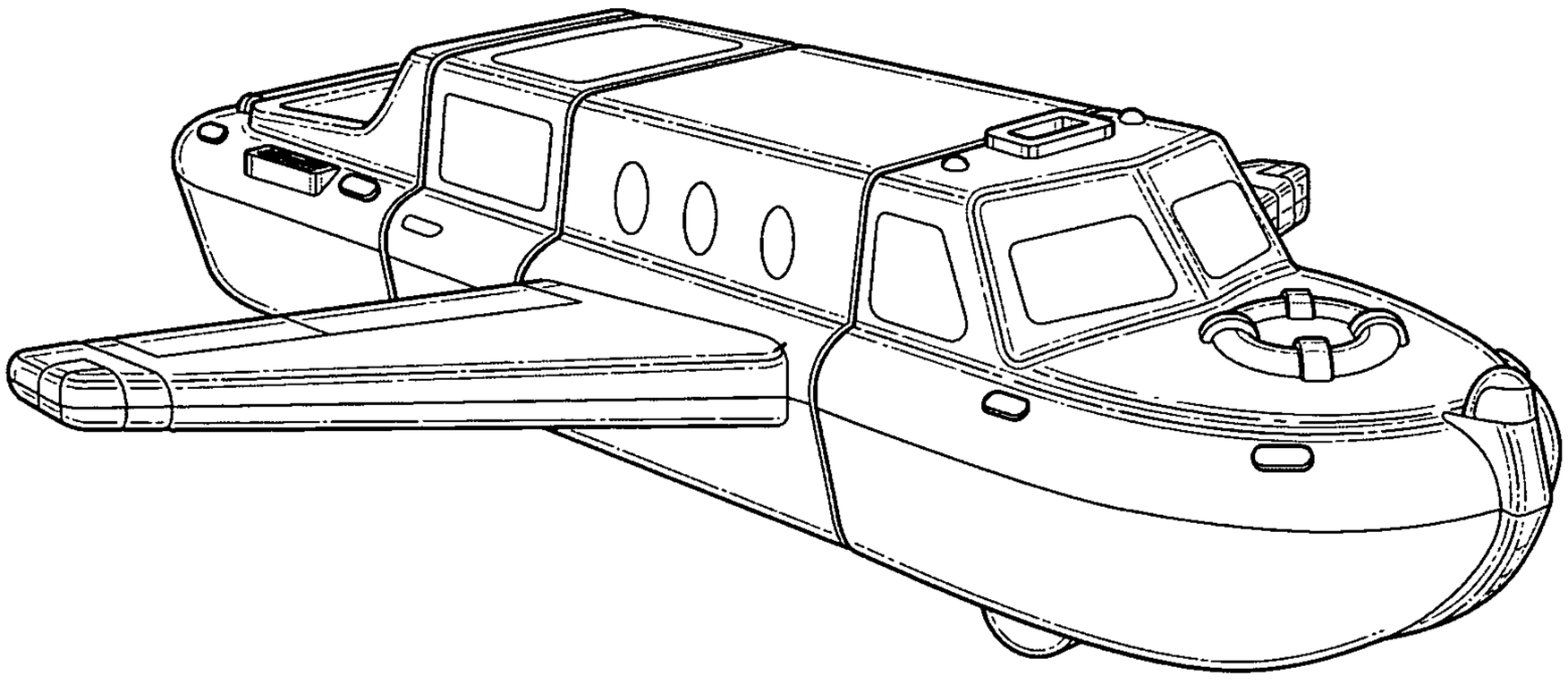

FIG. 22

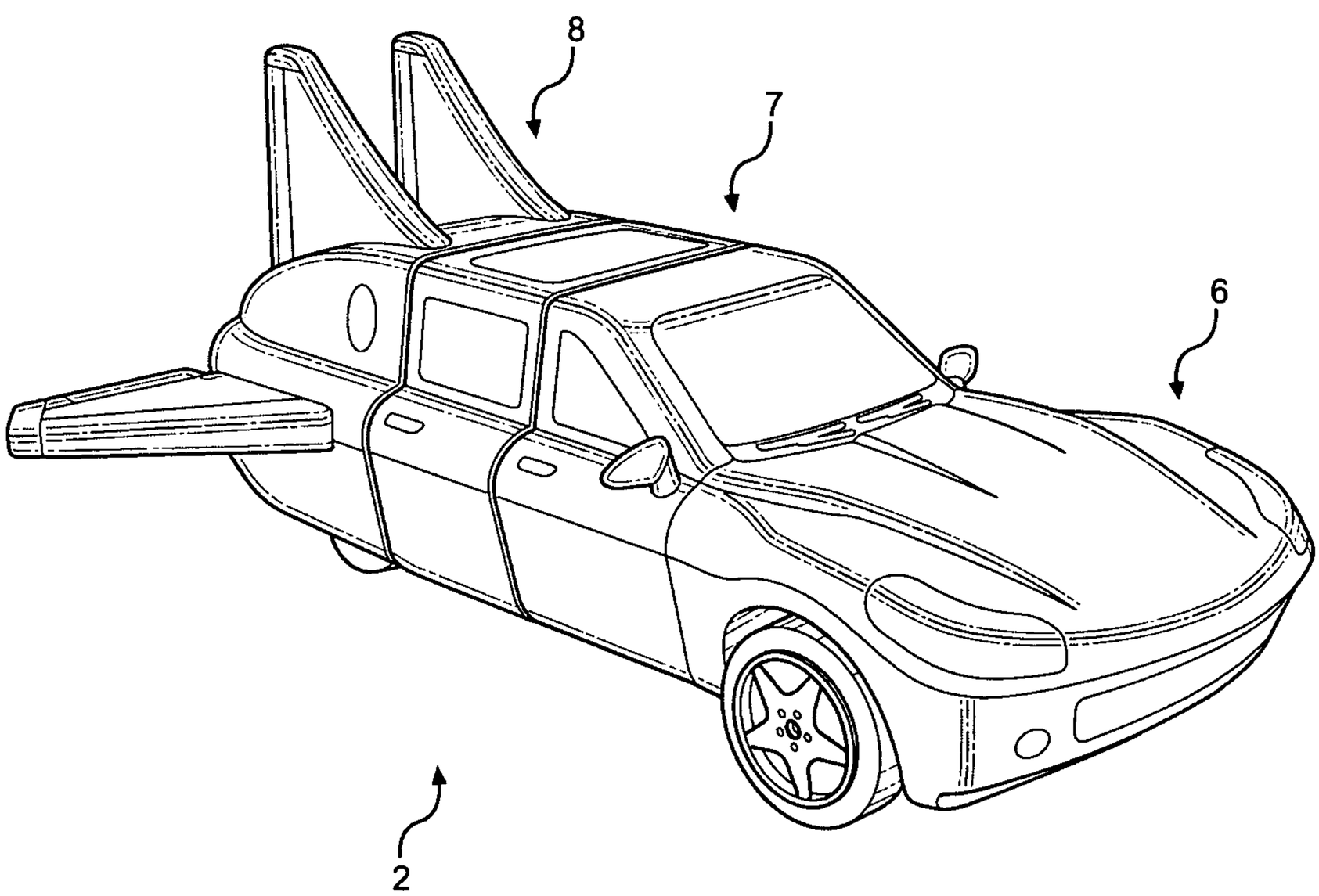

FIG. 23

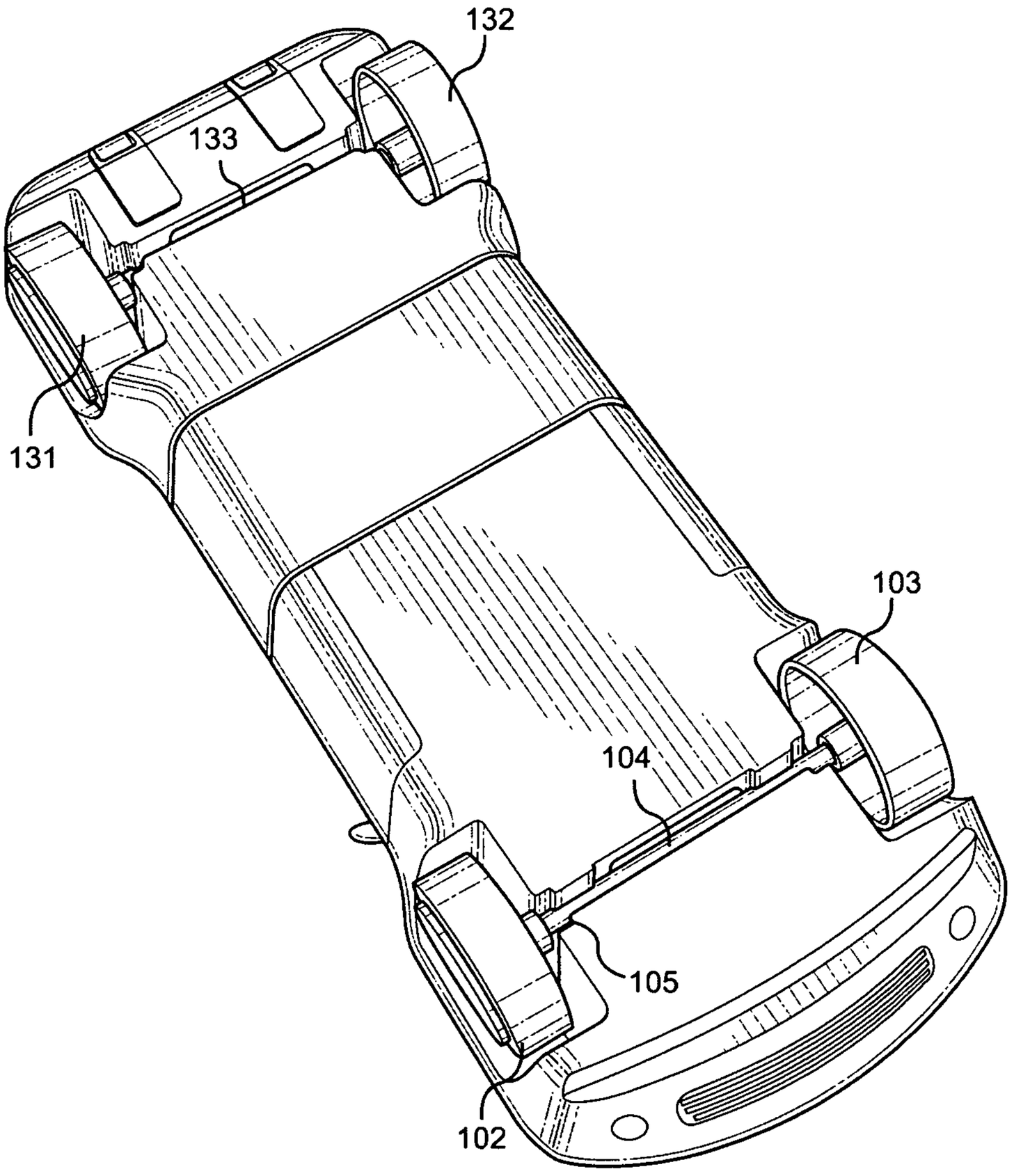

FIG. 24

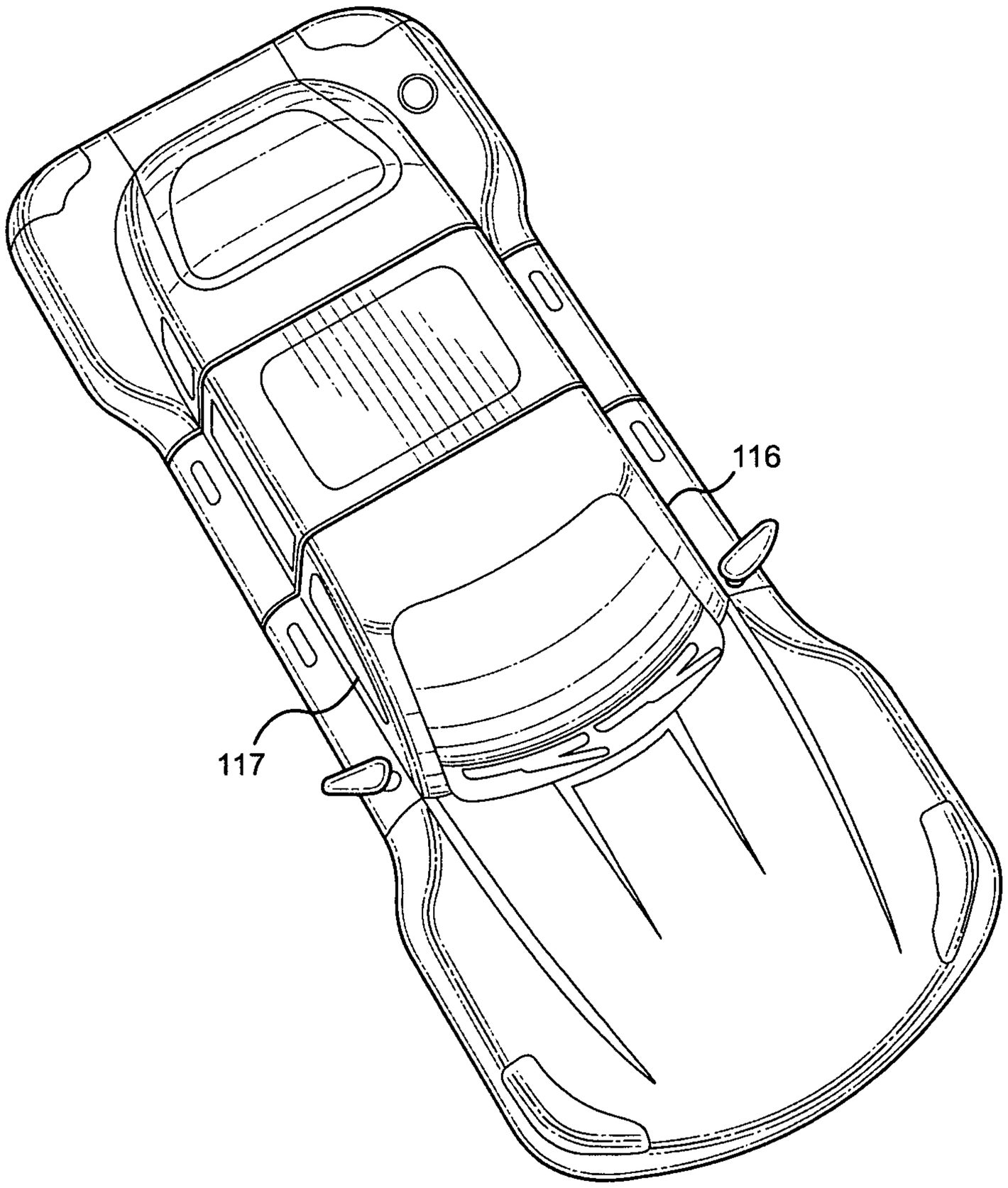

FIG. 25

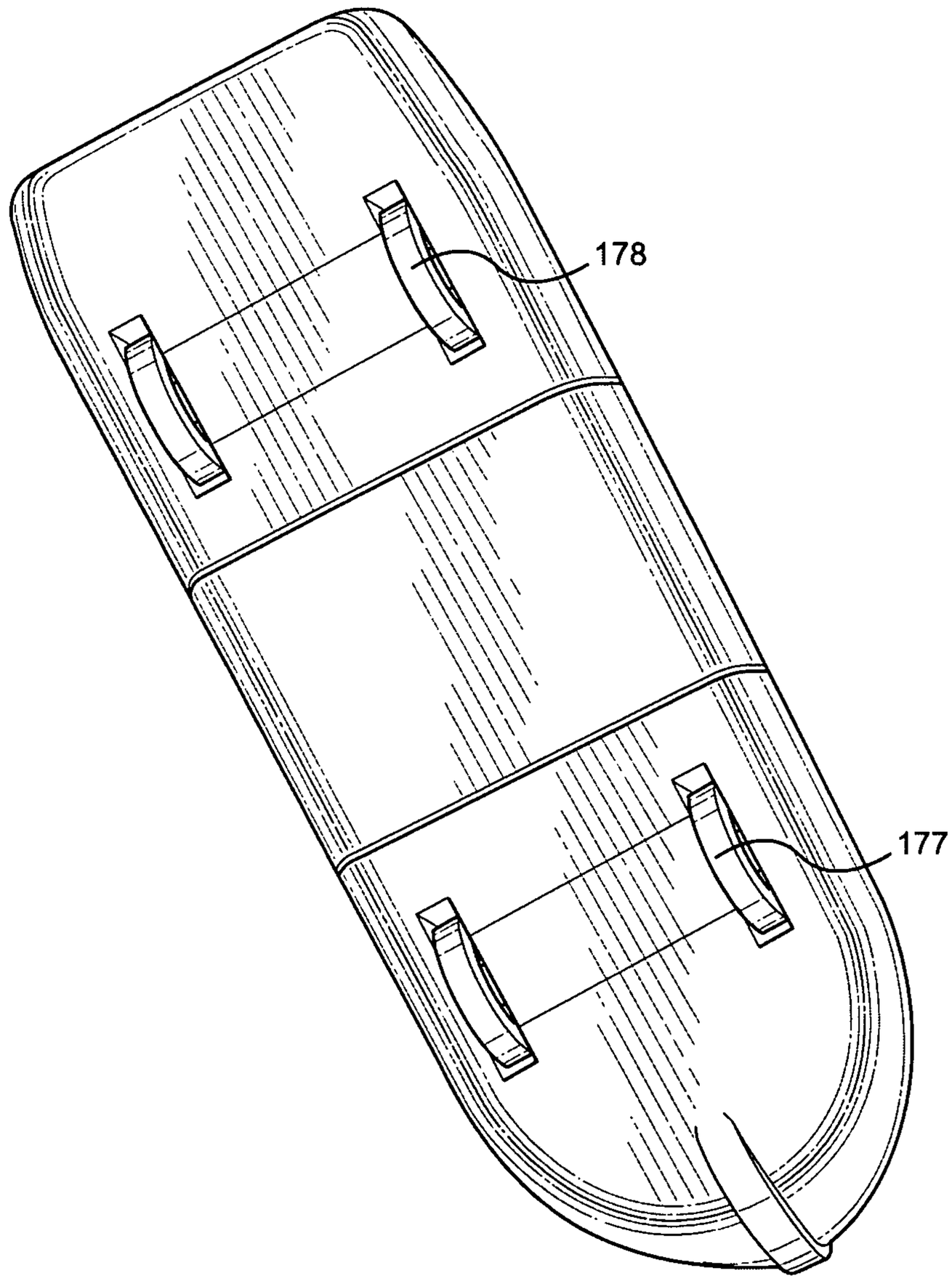

FIG. 26

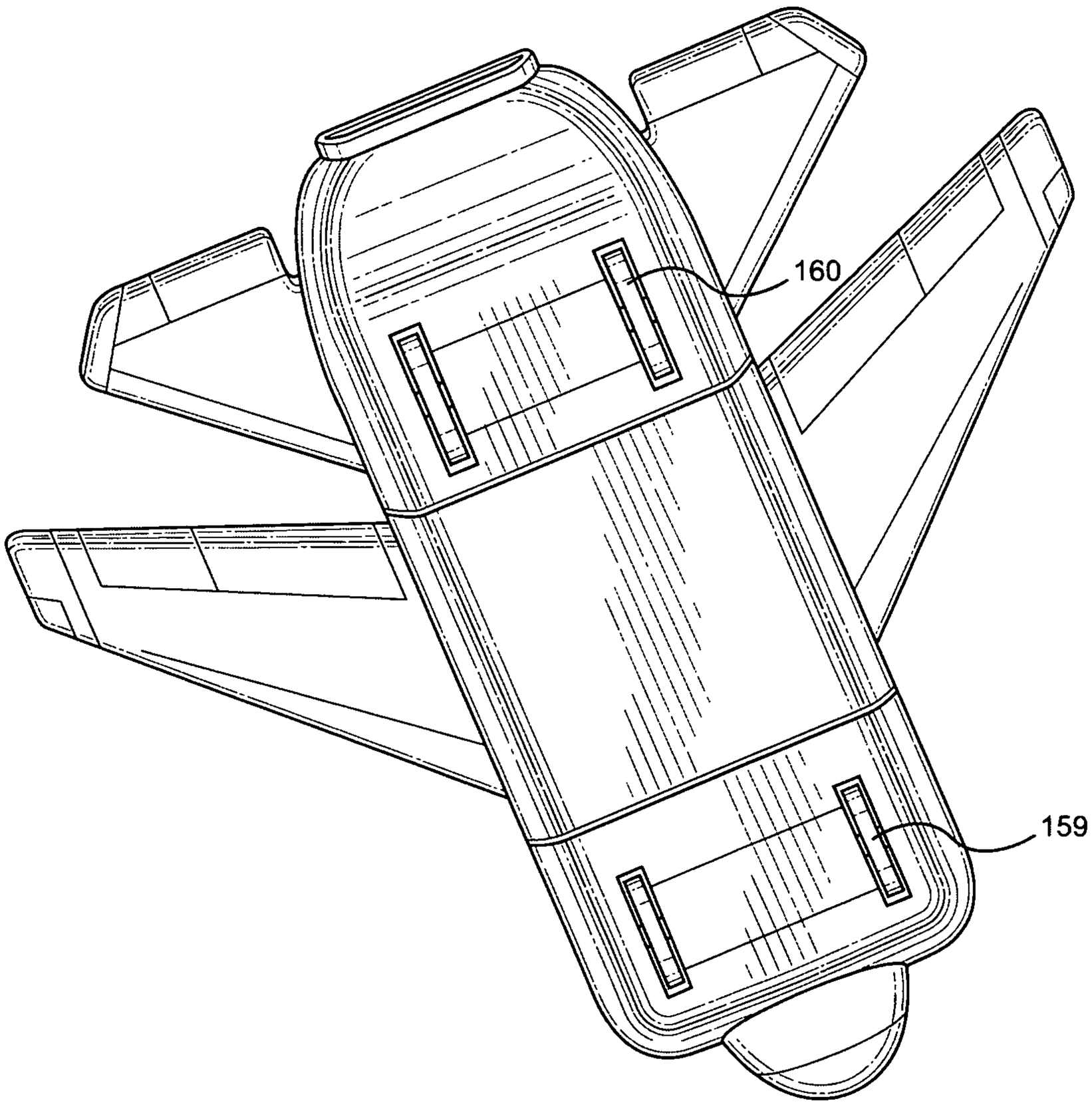

FIG. 27

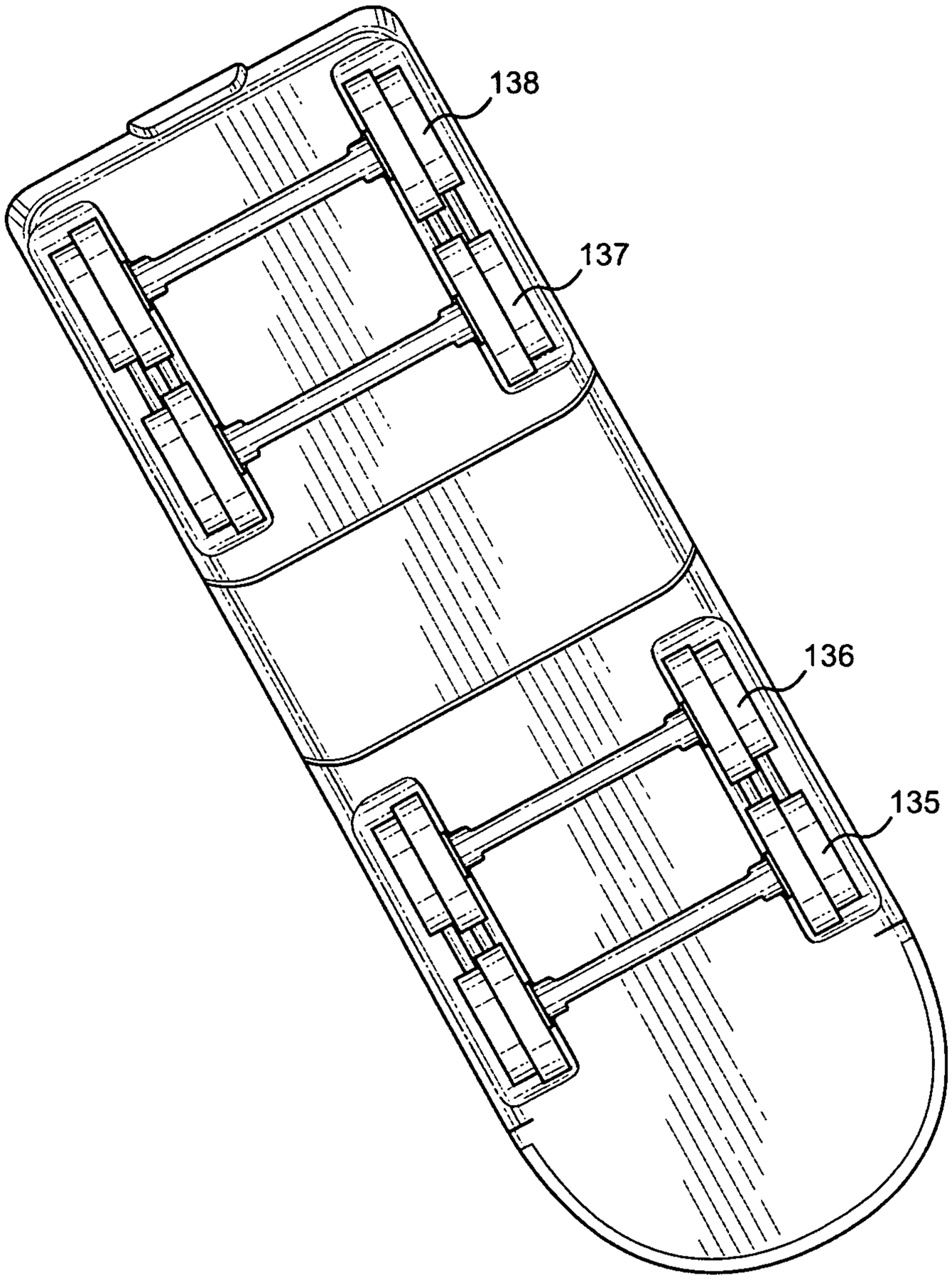

FIG. 28

MIX AND MATCH TOY KIT

This disclosure teaches a mix or match toy wherein there are several different units composed of a plurality of sections, all having a common theme.

In one embodiment of the disclosure, the common theme is modes of transportation.

In one embodiment, each unit is comprised of at least two sections.

In another embodiment each unit is comprised of at least three sections.

In yet another embodiment, each of the units is connected to at least one other unit by the use of magnets.

In yet another embodiment of the disclosure, the sections of the units are interchangeable.

In another embodiment of the disclosure, one of the units for the transportation toy is an airplane.

In another embodiment of the disclosure, one of the units for the transportation toy is an automobile.

In another embodiment of the disclosure one of the units for the transportation toy is a locomotive.

In yet another embodiment of the disclosure, one of the embodiments is a boat.

BRIEF DESCRIPTION OF THE DISCLOSURE

The features and advantages of the present disclosure will be more apparent from the following detailed description in conjunction with the accompanying drawings, in which:

FIG. **1** is a perspective view of the automobile unit;

FIG. **2** is a perspective view of the locomotive unit;

FIG. **3** is a perspective view of the boat unit

FIG. **4** is a perspective view of the airplane unit;

FIG. **5** is a perspective view of the distal end of the front section of automobile unit;

FIG. **6** is a perspective view of the proximal end of the middle section of the automobile unit;

FIG. **7** is a perspective view of the distal end of the middle section of the automobile unit;

FIG. **8** is a perspective view of the proximal end of the rear section of the automobile unit;

FIG. **9** is a perspective view of the distal end of the front section of the locomotive unit;

FIG. **10** is a perspective view of the proximal end of the middle section of the locomotive unit;

FIG. **11** is a perspective view of the distal end of the middle section of the locomotive unit;

FIG. **12** is a perspective view of the proximal end of the end section of the locomotive unit;

FIG. **13** is a perspective view of the distal end of the front section of the boat unit;

FIG. **14** is a perspective view of the proximal end of the middle section of the boat unit;

FIG. **15** is a perspective view of the distal end of the middle section of the boat unit;

FIG. **16** is a perspective view of the proximal end of the of the end section of the boat unit;

FIG. **17** is a perspective view of the distal end of the front section of the airplane unit;

FIG. **18** is a perspective view of the proximal end of the middle section of the airplane unit;

FIG. **19** is a perspective view of the distal end of the middle section of the airplane unit;

FIG. **20** is a perspective view of the proximal end of the end section of the airplane unit;

FIG. **21** is a perspective view of an interchanged mid-section vehicle assembly;

FIG. **22** is a perspective view of an additional interchanged mid-section for a vehicle;

FIG. **23** is a perspective view of an interchanged end section;

FIG. **24** is a perspective view of the underside of the automobile unit;

FIG. **25** is a perspective view of the top side of the automobile unit;

FIG. **26** is a perspective view of the underside of the boat unit;

FIG. **27** is a perspective view of the underside of the airplane unit; and

FIG. **28** is a perspective view of the underside of the locomotive unit.

DETAILED DESCRIPTION OF THE DISCLOSURE

Referring to FIGS. **1-2**, and in one embodiment of the disclosure, the mix or match toy **1** includes an automobile unit **2**, an airplane unit **3**, a locomotive unit **4**; and a boat unit **5**. In other embodiments, any one of the transportation units are substituted for a bus unit (not shown) a space shuttle or any other mode of transportation. In another embodiment, there are additional transportation units. In another embodiment of the mix or match toy, the units have, instead of a transportation theme, a different theme. For example, the theme could be buildings, fashion, humans, fish, mammals or other animals (including insects, birds, etc), food, dinosaurs, botany, lab equipment, electronic devices, monsters, etc, and even combinations thereof.

Each unit is comprised of at least two sections. In one embodiment, each unit is comprised of at least three sections such that the automobile unit **2** comprises a front auto section **6**, a second or middle auto section **7**, and a rear auto section **8**. Continuing the scenario, the airplane unit **3** comprises a front airplane section **9**, a second or middle airplane section **10**, and a rear airplane section **11**. The locomotive unit **4** comprises a front locomotive section **12**, a second or middle locomotive section **13**, and a rear locomotive section **14**. The boat unit **5** comprises a boat front section **15**, a second or middle boat section **16**, and a rear boat section **17**.

The distal walls **18**, **19**, **20**, **21** of front sections **6**, **9**, **12**, **15**, have female receptors **22**, **23**, **24**, **25**. The female receptors are shown as rectangular; however, in other embodiments, the female receptors are rectangular, oval, circular, triangular, pentagonal, or any other shape. Representative of all of the square female receptors, the automobile receptor has receptor side walls **200**, **201**, **202**, **203** Within each of the female receptors **22**, **23**, **24**, **25** there is at least one magnet which is either glued to the receptor rear wall **26**, **27**, **28**, **29** of the female receptor **22**, **23**, **24**, **25**, or embedded into or within the plastic of the receptor rear wall **26**, **27**, **28**, **29**. In one embodiment, part of the magnet projects from the receptor rear wall **26**, **27**, **28**, **29**, magnet inserted through the front wall **26** from behind the front the wall **26**. In one embodiment, two magnets either parallel, next to each other, or one on top of another, project from the front wall. In one embodiment, two magnets are positioned parallel and perpendicular to the length of the body of the structure, each of said magnets partially extending out from said receptor rear wall **26**, **27**, **28**, **29**.

In another embodiment, North and South poles **30** & **31**; **32** & **33**; **34** & **35**; **36** & **37** comprising the two ends of the same magnet are projecting through the receptor end wall **26**, **27**, **28**, **29**, with the body of the magnet integral with the

two poles positioned behind the front wall (not shown). The magnet is held in place by any method known in the art.

The rear ends or sections **8**, **11**, **14**, **17** of each of the units have, at their proximal walls **38**, **39**, **40**, **41**, male projections **42**, **43**, **44**, **45**, containing or a material **46**, **47**, **48**, **49**, with sides **1000**, **1001**, **1002**, and **1003** forming the male projection, which is attracted to a magnet. This material includes iron, nickel, cobalt, some alloys of rare earth metals, and some naturally occurring minerals such as lodestone. These materials while not magnets themselves, are ferromagnetic materials.

In one embodiment, the material is attached to the male projection by an adhesive (not shown). In another embodiment, the material is in the form of a plate **300**, enveloped by the male projection **42**, **43**, **44**, **45**. The plate (herein labeled as the material **46**, **47**, **48**, **49**, positioned near the proximal walls **50**, **51**, **52**, **53** of the male projection) of the male projection, is held in place by a cage **54**,**55**,**56**,**57**, Again, using the automobile unit **2** as representative of the other units, within opposing indentations **400**, **401** of the cage, and positioned at the top section **410** and bottom section **411** of cage **54** is clip **58** positioned in the same plane and opposite from clip **59**. Clips **58**, **59** are positioned on a base **60**, and are positioned to push the ferromagnetic plate against proximal wall **50** having two parallel linear openings **62**, **63** corresponding to the magnets of the female connector. The proximal wall **50** is integral with support columns **64**, **65** for supporting the projection plate which has part of indentations **400**, **401** for the clips.

Middle sections **7**, **10**, **13**, **16** have a proximal end **66**, **67**, **68**, **69**, and a distal end **70**, **71**, **72**, **73**. As shown, the proximal ends have male projections **74**, **75**, **76**, **77**, and distal ends have female receptors **78**, **79**, **80**, **81**.

In another embodiment, the front sections **6**, **9**, **12**, **15** comprise the male projection and the rear sections have the female receptors. Similarly, the position of the male projections and female receptors on the middle section can be reversed. In all cases, the shape of the female receptor corresponds to the shape of the male projection, and vice versa. The male or female receptors can be positioned through the walls prior to the walls being inserted into the various sections. These receptors can be snapped in, held in place by glue, or by any other means known in the art.

Each section of the individual units **2**,**3**,**4**,**5**, have a top section **82**, **83**, **84**, **85** and a bottom section **86**, **87**, **88**, **89**. The contour of the top sections **82**, **83**, **84**, **85** are virtually identical to/with each other, and the contours of the bottom sections **86**, **87**, **88**, **89** are virtually identical to/with each other. Thus, the various front, mid and end sections of the various embodiments are interchangeable. At least one midsection of one vehicle can be interchanged with or added to another vehicle. Alternatively, a rear section can be interchanged. There are countless possibilities. The top sections and the bottom sections can be secured by any means known in the art, including glue, snapping together of a pin and hole, screwing the two sections together, etc.

The distal and proximal walls containing the projection and receptor are either inserted after the top and bottom sections are secured together or before. These walls can be glued into position snapped into position by pins, or by any other means known in the art. The walls are fitted within or at the ends of the contour.

The differences among the sections lies in the extensions extending from the sections, the features painted on the various sections of the vehicles, and the set of wheels on the front sections and rear sections of the vehicles. Also, non-contoured features that extend from the contour of the unit differ.

The automobile unit **2** has a hood **100** as part of the front section, painted on headlights **101**, **101***a* and a set of mag wheels **102** **103** held in place by an axle **104** which in turn is held in place by a grab split **105** on the underside of the front section of the automobile unit **2**. The front section also has two side view mirrors **106**, **107**. As in all of the units, the proximal and distal ends of the sections are glued in or secured in place by any known method. Prior to inserting the distal or proximate ends, the appropriate magnetic or metal inserts are positioned through the front wall of the female receptor or through an opening in the distal or positioned through proximal walls for the male receptor.

The front section also comprises two door handles **113**, **114**, as well as a painted on front windshield **115**, and two side windows **116**, **117**.

The middle section of the automobile unit has painted on windows **118**, **119**, door handles **120**, **121**, and a moon roof **122**. The rear section of the automobile unit has another set of wheels.

The end section of the automobile unit **2** comprises two side windows **128**, **129**, a rear window **130**, and, besides some other accoutrements, a set of mag wheels **131**, **132**, held in place by an axle **133**, along with the male projection discussed supra.

The locomotive unit which is the locomotive comprises a front section having a cow catcher **134**, two sets of four wheels **135**, **136**, **137**, **138** held by two axles (not shown). The front section has two horns **140**, **141** above the control room **142**.

The middle section of the locomotive unit comprises air intake vents **143**, **144** as well as vent **145** and two exhaust pipes **146**, **147**, and the end section of the locomotive unit comprises two air intake vents **148**, **149**, a fan ensemble **150**, and a rear door (not shown), as well as two sets of locomotive wheels **152**, **153**, **154**, **155**, held by two axles (not shown).

The plane unit comprises a front section having a nose **156**, pilots' windows **157**, **158**, and a set of wheels **159**, **160** secured by means known in the art. The middle section of the plane unit has wings **161**, **162** and painted on windows **163**, **164**, **165**, **166**, **167**, **168**. The rear section has a set of wheels **169**, **170**, horizontal stabilizers **171**, **172** and vertical stabilizers **173**, **174**.

The boat unit has a front section having a rounded bow **175**, a life preserver **176**, and a set of wheels **177**, **178**. The middle section of the boat comprises a cabin superstructure and the rear section of the boat comprises the stem **179**, with an open area **180** for passengers or fishermen as well as a set of wheels. There are other accoutrements extending from the rear section.

The various sections of the various transportation units can be interchanged. For example, a middle section for an automobile can be inserted in place of or in addition to the middle section for the airplane. In another example, the front section of the locomotive locomotive can be attached to the middle section of the boat, and the end section can be the end section from the airplane. There are numerous possibilities.

It will be apparent to those skilled in the art that various modifications and variations can be made to the disclosure described above without departing from the spirit or scope of the disclosure. Thus, it is intended that the present disclosure cover modifications and variations that come within the scope of the appended claims and their equivalents.

What I claim is:

1. A mix or match toy, said toy comprising a plurality of units having a similar theme, each of said units comprising at least three body sections comprising:

a) a front section, said front section comprising:

i) a front section body;

ii) a distal end, said distal end comprising a distal end wall, said distal end wall comprising female receptor connector fitted within said distal end wall, said female receptor connector comprising:

1) a top female receptor connector wall;

1) a bottom female receptor connector wall;

2) a first side female receptor connector wall;

3) a second side female receptor connector wall; and

4) a rear female receptor connector wall;

said rear female receptor connector comprising a ferromagnetic structure;

a shape of said female receptor connector being complementary to a shape of a male connector such that said each said male connector extending proximally from two other said sections is capable of fitting within said female receptor connector, and a ferromagnetic structure of said male connector being attracted to said ferromagnetic structure of said female receptor connector, wherein said male connector comprises:

aa) a top male connector wall, a middle of said top male connector wall interrupted by a first clip extending from an end wall;

bb) a bottom male connector wall, a middle of said bottom male connector wall interrupted by a second clip extending from said end wall;

cc) a first side male connector wall;

dd) a second side male connector wall;

ee) a front male connector wall;

said ferromagnetic structure of said male connector being positioned behind and in contact with said front male connector wall, said ferromagnetic structure of said male connector held in place by said first clip and said second clip pushing said ferromagnetic structure of said male connector against a rear section of said front male connector wall;

iii) a front section top contour, wherein said front section top contour matches the top contour of any other section;

iv) a front section bottom contour wherein said front section bottom contour matches the bottom contour of any other section; and

v) a front section side contour, wherein said front section side contour matches the side contour of any other section;

b) a rear section, comprising:

i) a rear section body at a distal end;

ii) a rear section proximal end comprising:

A) a rear section proximal end wall;

B) said male connector extending from said rear section proximal end wall;

i) a rear section top contour, wherein said rear section top contour matches the top contour of any other section;

ii) a rear section bottom contour wherein said rear section w contour matches the bottom contour of any other section; and

iii) a rear section side contour, wherein said rear section side contour matches the side contour of any other said side contour of any other section;

c) at least one non-reversible middle section, said middle section comprising:

i) a middle section body;

ii) a middle section proximal end, said middle section proximal end comprising:

A) a middle section proximal end wall; and

B) a second said male connector, said second said male connector extending from said middle section proximal end wall;

iii) a middle section distal end, said middle section distal end comprising:

A) a middle section distal end wall; and

B) a second said female receptor of said mix or match toy, said second said female receptor connector positioned within said distal end wall of said middle section distal end wall:

iv) a middle section top contour wherein said middle section top contour matches the top contour of any other section;

v) a middle section bottom contour wherein said middle section bottom contour matches the bottom contour of any other section; and

vi) a side contour, wherein said side contour of said middle section matches the side contour of any other said side contour of any other section.

2. The mix or match toy of claim 1, wherein said similar theme is transportation.

3. The mix or match toy of claim 1, wherein the units are selected from the group consisting of an automobile, a locomotive, a boat, an airplane, and combinations thereof.

4. The mix or match toy of claim 3, wherein:

a) said front section further comprises a set of two wheels separated by an axle attached to and positioned under the bottom of the bottom contour; and

b) said rear section further comprises a second said set of two wheels separated by an axle attached to and positioned under the bottom of the bottom contour.

5. The mix or match toy of claim 1, wherein

a) each of said ferromagnetic structure of each said male connectors of said body sections comprises a ferromagnetic plate; and b) each of said ferromagnetic structure of each said female receptor connectors of said body sections comprises a magnet.

6. The mix or match toy of claim 1, wherein each of said ferromagnetic structure of each said male connectors of said body sections comprises a magnet; and wherein each of said ferromagnetic structure of said female receptor connectors of said body sections comprises a ferromagnetic material.

7. A mix or match toy, said toy comprising a plurality of units having a similar theme, each of said units comprising at least three body sections comprising:

a) a front section, said front section comprising:

i) a front section body;

ii) a distal end, said distal end comprising a distal end wall, said distal end wall comprising a male connector extending from said distal end wall, said male connector comprising:

aa) a top male connector wall extending from said distal end wall, a middle of said top male connector wall interrupted by a first clip extending from said distal end wall;

bb) a bottom male connector wall, a middle of said bottom male connector wall interrupted by a second clip extending from said end wall;

cc) a first side male connector wall;

dd) a second side male connector wall;

ee) a front male connector wall;

ff) a ferromagnetic structure being positioned behind and in contact with said front male connector wall, said ferromagnetic plate structure held in place by said first clip and said second clip pushing said ferromagnetic structure against a rear section of said front male connector wall;

a shape of said male connector being complementary to a shape of a female receptor connector such that each said male connector fits within said female receptor connector positioned proximally in two other said sections, and the ferromagnetic structure of said male connector being attracted to a ferromagnetic structure of said female receptor connector, said female receptor connector comprising:

1) a top female receptor connector wall;

2) a bottom female receptor connector wall;

3) a first side female receptor connector wall;

4) a second side female receptor connector wall; and

5) a rear female receptor connector wall, said rear female receptor connector comprising a ferromagnetic structure;

iii) a front section top contour, wherein said front section top contour matches the top contour of any other section;

iv) a front section bottom contour wherein said bottom contour of said front section matches the bottom contour of any other section; and

v) a front section side contour, wherein said front section side contour matches the front section first side contour of any other said side contour of any other section;

b) a rear section, comprising:

i) a rear section body at a distal end;

ii) a rear section proximal end comprising:

A) a rear section proximal end wall;

B) said female receptor connector positioned within said rear section proximal end wall;

iii) a rear section bottom contour wherein said rear section bottom contour matches the bottom contour of any other section; and

iv) a rear section side contour wherein said rear section contour matches the side contour of any other said side contour of any other section;

c) at least one non-reversible middle section, said middle section comprising:

i) a middle section body;

ii) a middle section distal end, said middle section distal end comprising:

A) a middle section distal end wall; and

B) a second said male connector, said second male connector extending from said rear section distal end wall;

iii) a middle section proximal end, said middle section proximal end comprising:

A) a middle section proximal end wall; and

B) a second said female receptor, said second female receptor connector positioned within said proximal end wall of said middle section proximal end wall;

iv) a middle section top contour wherein said middle section top contour matches the top contour of any other section;

v) a middle section bottom contour wherein said middle section bottom contour of matches the bottom contour of any other section; and

vi) a middle section side contour, wherein said middle section side contour matches the side contour of any other section.

8. The mix or match toy of claim **7**, wherein said similar theme is transportation.

9. The mix or match toy of claim **7**, wherein the units are selected from the group consisting of an automobile, a locomotive, a boat, an airplane, and combinations thereof.

10. The mix or match toy of claim **9**, wherein a) said front section further comprises a set of two wheels separated by an axle attached to and positioned under the bottom of the bottom contour; and b) said rear section further comprises a second said set of two wheels separated by an axle attached to and positioned under the bottom of the bottom contour.

11. The mix or match toy of claim **7**, wherein each of said ferromagnetic structure of each of said male connector of said body sections comprises a ferromagnetic plate; and wherein each of said ferromagnetic structure of each of said female receptor connector of said body sections comprises a magnet.

12. The mix or match toy of claim **7**, wherein each of said ferromagnetic structure of each of said male connectors of said body sections comprises a magnet; and wherein each of said ferromagnetic structure of each of said female receptor connectors of said body sections comprises a ferromagnetic plate.

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